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EDITOR:

JAMES B. HUNTER, M. D.

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MEDICAL JOURNAL:

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Original Communications.

ART. I.—*Plea for the Treatment of the Consequences of Obstructive Enlargement of the Prostate by Early Use of the Catheter.*[1] By W. H. VAN BUREN, M. D.

I TAKE the opportunity afforded by your kind indulgence, to lay before you the results of some years' experience in the management of the consequences of prostatic obstruction. This is a subject which gains in interest as we become familiar with it—I may add, also, in personal interest as we grow older—for, although the progress of surgical pathology has made it clear that enlargement of the prostate is not a physiological change incident to all of us, as Brodie taught, but that it depends upon a fibro-muscular overgrowth identical with that which occurs in its analogue in the other sex—the uterus—nevertheless, the diminishing number of men living after fifty renders the chances of urinary trouble from this cause unpleasantly large. But the true interest in the subject arises from the fact that familiarity with it gives us, in some degree, the power of prolonging valuable lives, and of saving those, to whom especially we owe service, from the most painful suffering incident to humanity.

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[1] Substance of a paper read before the New York Academy of Medicine, May 7, 1874.

I have been often impressed with the conviction that the occurrence of symptoms of prostatic urinary obstruction is pretty generally accepted, in our profession as evidence that a man who has passed the prime of life is beginning to "break up;" that there is little use of undertaking measures for his systematic or permanent relief, and little duty is owed him beyond drawing off his water when positive retention overtakes him, and the judicious administration of opium to render his pains tolerable, and soothe his downward course. To this mode of looking at such a case, I am compelled to place myself in antagonism. I have seen too many instances of relief from urgent symptoms, with arrest of progressive disease, and the gain of subsequent years of usefulness by proper surgical treatment, to admit that this is the right course. I have thought that Brodie's melancholy way of describing the old man's position in regard to urinary troubles was responsible for the general acquiescence in this policy of inaction. He says: "When the hair becomes gray and scanty, when specks of earthy matter begin to be deposited in the tissues of the arteries, and when a white zone is formed at the margin of the cornea, at this same period the prostate gland usually, I might say invariably, becomes increased in size." Now, since this great and good surgeon wrote in this manner, we have learned for the first time the histological structure, the physiological uses, and the true nature of the morbid change which occurs in the enlargement of the prostate; and we know pretty certainly that the latter is not "one of a series of natural changes which the system undergoes after the middle period of life," as he thought, but a distinct and well-recognized disease, which, as proved by the exhaustive researches of Henry Thompson, occurs obstructively in only about 12 per cent. of men living after the age of fifty. Suppose, then, that about this time of life a man, otherwise sound, with a right by inheritance to twenty years more of life, begins to develop an overgrowth of his prostate, which, by obstructing the free passage of his urine, starts a train of symptoms which experience teaches us leads pretty certainly to invalidism and premature death. Shall we accept this as a necessary result, or endeavor to avert it? Avert it, most assuredly, if we have the means. I believe that we have the means; but, for reasons which are not easy to understand, their employment is not regarded by the profession with as much favor as their merits would seem to deserve.

I may say, at the outset, that I have no medical remedy to offer whereby enlargement of the prostate may be checked or dissipated. Medicine has thus far proved as unreliable for this purpose as for curing fibroid tumors of the uterus. It is the results which follow, when this enlargement, which we have not the power to control, encroaches upon the outlet of the bladder so as to threaten obstruction to the consummation of a vital function, which will occupy us; and the best remedy we possess wherewith to palliate these results is to take measures to accomplish the removal of the urine from the bladder, just as soon as possible after the natural power has given signs of failing, by artificial means—preferably by the catheter. Commencing with this instrument early, it is to be persevered in with gentleness and judgment, regularly and systematically, until a tolerance of it is acquired by the patient, and until he has been taught to use it for himself—to be in this respect his own surgeon—and to rely upon it entirely for emptying the bladder. This is the course which, in my judgment, promises us the best results in arresting that otherwise inevitable train of symptoms which follows the growth of a mechanical impediment at the neck of the bladder. These symptoms are caused by progressive morbid alterations, at first in the bladder itself, and later in the ureters and kidneys, due to the constantly acting obstruction to free escape of the urine; changes which succeed each other in slow but regular sequence, involving almost necessarily the formation of stone in the bladder, and leading to a fatal issue, attended by an amount of physical suffering we are called upon to witness in no other malady so common to our race. If we can give the patient the power to introduce a well-devised instrument, through the natural outlet into the reservoir and effect the escape of the urine through it by the simple force of gravity, without effort and painful straining, we get rid at once of the main cause of the serious injuries to the urinary organs—for they are mainly produced by these painful efforts to overcome

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obstruction, and we thus simply substitute an ingenious resource of art, and the inconveniences which attend its use, for a failing function which Nature's efforts are hopelessly inadequate to restore. This is an outline of the argument I would like to submit to you, if time allowed. I wish to make a plea for the earlier use of the catheter in these cases of urinary obstruction, and also for the practice of relying upon it entirely to avert bad consequences, rather than to let the case go by default, as we do now until retention has occurred and we have to meet it at a disadvantage. It will occur to you, probably, that there is nothing very new in this. I am aware of it—there is no novelty to be claimed. My object is to arrive, if possible, at a more just appreciation of the value of an old remedy, and to contribute toward a proper answer to these two questions: 1. How soon is it our duty to urge the adoption of the catheter upon an unwilling patient after he has given evidence of obstructive trouble? 2. At what stage of the case is it proper to advise a patient to give up trying to make water, and to rely upon the catheter entirely?

Perhaps a glance at a case, still under my observation, will illustrate the bearing of these questions. A man of fifty-five communicates to me, with obvious reluctance and hesitation, that he is annoyed by too frequent calls to empty his bladder, especially at night. The symptom interferes with his daily work, which is important and engrossing. He asks for relief. I find very acid, clear urine, with defective power and volume of the stream; and an enlarged and knobby prostate. I explain to him the nature and cause of his trouble: that a dam is being formed at the outlet of the bladder, of a nature that medicine cannot remove; and that he must learn to use a catheter, or he will be liable to entire stoppage, and perhaps to get stone. The suggestion is obviously disagreeable. I see the patient only incidentally during the next two or three years, and learn from him that his trouble is no better—in fact, rather worse; he "must come and see me again about it." Some time later he is overtaken by an attack of acute disease, at the height of which retention occurs, and the catheter is required, and has to be used regularly for some days. After this occurrence, the obvious necessity of the measure induces the patient to consent to learn to use the instrument, and he shortly gets to introducing it for himself every night on retiring—except when there is a good excuse for neglecting it—and on the whole has better sleep. At the end of three or four years he has been on the average more comfortable, has held his own, and weighs more. But now there is evidence that, although he is making water twice as often as he should, he does not empty his bladder entirely—except by the catheter at bedtime; and now I am consulted as to whether he should not introduce the catheter more frequently. I advise this course, by all means; for, tolerance being in some degree already attained, a suitable injection can be used for the bladder, and in a short time its irritability may be so far diminished that the regular use of the catheter four or five times in the twenty-four hours will suffice; and this would save him both time and pain, as well as from the danger which accompanies the ineffectual efforts he is still making.

Here is a result reached at the end of seven or eight years, by which this man's bladder is at last in the way of being regularly relieved without painful and damaging effort. I trust he will be saved from stone, although he did incur the danger of retention as I had foretold; for he can empty his bladder thoroughly now, and also wash it out with warm water at will, if necessary. But it is very clear to me, after observing his case through all these years, that if the patient had gone to work when he first applied to me for relief, and learned within the year to help himself with the catheter, he would have saved himself both time and torment, and that at this moment his bladder and kidneys would be in better condition to serve him for the next ten years.

I cite this as an average case, although it is proper to remark that the usual results which follow retention of urine from prostatic obstruction are more serious and urgent than those which followed in this patient. But it brings us face to face with the principal difficulty we encounter in endeavoring to carry out the practice I am advocating: the unwillingness of the patient to undertake what seems to him so difficult and painful an operation, and to bind himself to it for life, on such slender grounds as the very supportable inconvenience he has to bear at the beginning of his malady. In truth, he is vaguely ignorant of the meaning of his symptoms, and of what they threaten in the future. He comes without suspicion of their serious import, expecting some skillfully-administered medicine that will promptly banish them. It becomes the responsible duty of his physician to explain to him their significance, to show him the dangers that await him, and how they are to be avoided. With a full knowledge of these, and the conviction that art can avert them, it becomes also a duty, I think, that he should advise his patient to learn to use the catheter. The fact that he does not receive unanimous and concurrent advice to this end, in consulting others, is often a stumbling-block to the patient; for there are some who are satisfied to recommend pareira brava and flaxseed-tea with an opium-suppository at night, and this sort of advice falls in much more readily with the patient's wishes. Those who hold this view object to the catheter that, after all, it is only a palliative remedy. But this objection could also be urged against the use of quinine in ague, mercury in syphilis, and opium in pain; and the catheter certainly fulfills accurately the indications presented by such a case when it secures the accomplishment of a function in which Nature is failing in consequence of mechanical obstruction. As neither medicine nor operative surgery can remove this obstruction, it remains for us to obviate its effect in preventing the escape of urine. If this can be accomplished regularly and systematically, as Nature does it, by the aid of the catheter, then the sequence of damaging symptoms leading to textural change in vital organs could be arrested, and indefinite prolongation of life secured. This result, I should think, could be claimed for the catheter, and its employment would be more readily adopted by patients if the profession were in accord in recognizing the necessity of resorting to it early in all cases of urinary obstruction.

But for the fear of taxing your patience by enumerating the symptoms to which prostatic obstruction gives rise, and placing side by side with them the series of coincident pathological changes in the urinary organs by which they are explained, I might demonstrate that their sequence could be interrupted at once by any means capable of preventing the increased muscular effort or straining which the mechanical impediment compels the patient to employ each time he attempts to pass water.

There would be but one exception to this, namely, the greater amount of blood brought to the neighborhood of the neck of the bladder by the increasing bulk of the prostate and the effect of its peripheral pressure in causing defective circulation in, and varicose dilatation of, the veins of the vesical plexus—all of which favor inflammation at the neck of the bladder. The use of the catheter, brought about in such a way as to occasion as little irritation as possible, would tend directly to arrest the progress of the other morbid changes, namely, the reflex nervous action caused by the presence of the impediment, which is constantly stimulating the bladder to muscular contraction or spasm; the consequent dilatation, pouching, and sacculation of the bladder, and muscular hypertrophy, from the increased force as well as frequency of extrusive effort—which bruises and worries the neck of the bladder very much, as the constant straining in dysentery damages the lower end of the rectum; the secondary obstruction which grows up at the outlets of the ureters where they traverse for three-quarters of an inch the thickening walls of the bladder—giving rise to distention of these tubes, and threatening invasion of the kidney; and, sooner or later, retention of the urine, which converts the passive congestion at the neck of the bladder into positive inflammation, and leaves behind it a more or less extensive pus-secreting surface within its cavity, attended by symptoms of catarrh, which, when once established, never again entirely disappear. All these results, I repeat, could be prevented if the use of the catheter were adopted early, and relied upon entirely. At the epoch of retention the surgeon's aid is invoked through absolute necessity, but too often the catheter is employed only in the emergency, and necessarily under the most unfavorable circumstances. It is not regarded as a remedy for the disease—to be adopted and used systematically; but only as a resource in extremity—to be abandoned as soon as the crisis of the retention shall have passed. Much damage has been done already, which might have been prevented; but, even at this stage, after retention has occurred, if the patient would consent to learn to use the catheter regularly and rely upon it entirely, still greater evils in the way of pain and suffering might be averted. For, now, in the steadily-progressive sequence of pathological changes a new source of danger presents itself: the alkaline pus, always now secreted by the bladder, gives up its soda to the lightly-held phosphoric acid of the acid phosphates of ammonia and magnesia of the urine ; and these earthy substances, only held in solution by an excess of phosphoric acid, are precipitated in the cavity of the bladder as insoluble phosphates—exposing the patient to the danger and suffering of stone. The retained and altered urine, also, in cases of prostatic obstruction, readily falls into decomposition before leaving the body ; and the free ammonia thus given off, besides adding to the intensity of the cystitis by its irritating qualities, reacts in a remarkable manner upon the pus, forming an adhesive gelatinoid mucus. This, acting as a cement to the earthy particles of the insoluble phosphates, singularly facilitates the formation of a calculous mass. Thus stone in the bladder is a natural consequence of obstructive enlargement of the prostate.

The mode just described is perhaps the more common way in which it is brought about, for in old men with enlarged prostates calculi are usually phosphatic, but calculous disease also frequently occurs before the enlarging prostate has as yet caused any cystitis, by the simple detention in the bladder of a kidney calculus of lithic acid, which in a younger man, with a free outlet to his bladder, would have escaped at once. I have had recently several cases of this kind under observation, in one of which a gentleman, fifty-five years old, of gouty habit, with an enlarged prostate and a good deal of vesical irritability, but as yet perfectly clear though very acid urine, had three pure lithic-acid calculi in his bladder, from one-half to seven-eighths of an inch in diameter. He was relieved by lithotrity.

Not unfrequently also a nucleus of lithic acid from the kidney, which is prevented from passing off by a large prostate, becomes incrusted with phosphatic salts. This result, which is classical, involves necessarily the existence of a pus-secreting surface in the bladder.

I would remark here that, with the exception only of the dread of retention, I have found the fear of stone in the bladder to be the strongest inducement, among intelligent patients, to submit to the annoyances incident to learning the use of the catheter. And it is justly so, for, as I have shown, stone is a necessary consequence of urinary obstruction; and it is fair to infer that obviating the consequences of obstruction will prevent the formation of stone. To accomplish this result effectually, however, the use of the catheter must be begun early, continued systematically, and accompanied in certain cases by the use of injections of warm water into the bladder—by which the consequences of suppuration and of decomposing urine may be promptly washed away. I have still under observation a patient who, twelve years ago, at the age of fifty years, with difficult micturition, irritability of bladder, pain in the back, and the aspect of impaired general health, was in the habit of voiding insoluble phosphates. He had no stricture of the urethra; and no enlargement of the prostate could be felt from the rectum. Later, a centric prostatic growth was suspected; he commenced the use of the catheter, and, as soon as he was able to rely upon it entirely, all his symptoms disappeared. He is now in excellent health, and uses his catheter five times daily. I am cognizant of not a few similar cases in which a centric prostatic growth had been at first overlooked. In a case at present under treatment in which it was decided to subject the party to lithotomy, after removing two phosphatic calculi, the finger in the wound recognized a small tumor with a slender, flexible pedicle, growing out from the right side of the circular opening of the outlet of the bladder. It could be just reached by the finger, and could be distinctly pushed up, and also hooked down into the wound. It was seized by polypus-forceps, crushed, and twisted off. There is no peripheral enlargement of the prostate in this case; and this little pedunculated tumor, by dropping into the internal orifice of the urethra like a ball-valve, had prevented the patient from passing a drop of water for four years. The true nature of the impediment, although suspected, was not certainly known, or it might possibly have been snared. I explored the bladder through the wound, during the third week of convalescence, in search of a cause for spasms which still persisted, and found flabby walls with prominent muscular bands, and, with other evidences of prolonged overstretching, a pouched cavity toward the rectum in which some purulent ammoniacal urine was retained. Systematic washing out with tepid water was employed with a good result, and the patient now passes his water satisfactorily. Here was a case in which stone formed in a suppurating bladder in spite of the use of the catheter, and I attribute it to the patient's inability to wash out his bladder, by daily injection of tepid water through the catheter, in consequence of excessive pain and nervous susceptibility.

A man, aged seventy years, was brought to me some five years ago with symptoms of stone, who had been using a badly-curved silver catheter three times a day for thirteen years. At fifty-seven years old he had retention of urine, which, relieved only after a good deal of delay, had left him without the power of passing water—not even a single drop—but with little or no pain or irritability. After a little awkwardness at first, he had used the catheter without any trouble whatever, and had enjoyed good health to within a few months. The simple ease and *nonchalance* with which this man passed his catheter recalled the peculiar style in which we have all seen an old patient reduce a rupture which he had long carried.

I taught him to use a large-eyed silver catheter of a better curve, trained him to wash out his bladder himself by means of an India-rubber bag, and then reduced his stone—which was quite as large as I could grasp with a lithotrite—to pretty fine powder, in about twelve operations. He got rid of the *débris* entirely through his large-eyed catheter, and was permanently cured. The calculus was phosphatic. I still see this patient from time to time, well and active. He washes out his bladder every night—at which he grumbles; I tell him it is the only way he can save himself from a return of the stone. This is his eighteenth year of using the catheter. Would it not be much better, on the whole, if elderly men with symptoms of urinary obstruction should be advised to take the trouble to learn the use of the catheter before they get retention—instead of afterward; and, also, that they should learn to wash out their bladders, when necessary, before they get stone—instead of after they have been lucky enough to get cured of it? Where suppurative cystitis has been brought about as a result of prostatic obstruction, the systematic use of the catheter and injections, medicated and otherwise, promises more benefit than internal remedies. But, unless the catheter has been commenced earlier, the excessive pain and spasm at the neck of the bladder, which often accompany a high grade of vesical inflammation, may render the use of the instrument at this time impossible. In an apparently desperate case of this kind I have known forced injections to be employed, under the influence of an anæsthetic, in the hope of bringing about a state of atony from overstretching, and the comparative quiescence which belongs to the atonic condition. The result was unsatisfactory.

But I have not yet spoken of the condition of atony or loss of contractile power as one of the regular sequences of pathological changes following prostatic obstruction. This condition, accompanied by its necessary consequence dilatation, occurs, sooner or later, in prostatic obstruction always, in some degree, although the spasms which not unfrequently accompany the complication with stone would seem to suggest the reverse. The hypertrophied muscular fibres of the bladder become worn out by overwork, and degenerate, more or less, by fatty atrophy. This allows the walls of the bladder to yield to the pressure of the urine, which tends to accumulate in its cavity in consequence of the difficulty of escape through its obstructed outlet. Hence its alterations in shape, especially by bulging toward the rectum at the *bas fond*, and its general dilatation. When, in consequence of very slow and gradual formation of the obstructive growth, little or no catarrhal inflammation and consequent irritability have arisen, there are less hypertrophy and more dilatation of the bladder; and in these cases, through gradual failure of contractile power of its muscular coat, the condition known as atony is liable to be developed in a very insidious manner. The patient passes only a portion of the urine in his bladder, more or less remaining behind. The desire is gratified, the sensation of relief is felt, the urine ceases to flow, and the patient thinks he has emptied his bladder—when, in fact, he has not. This state of things, described by Civiale as "stagnation," by Thompson as "overflow," may continue a good while before it is recognized, the excess only of the urine over what the dilating bladder can comfortably hold being voided at the regular calls, or by involuntary dribbling, and the remaining or residual portion very gradually increasing in amount. Now and then this residual urine which the patient is unwittingly carrying about with him reaches a very considerable quantity before his sensations of discomfort and the general failure in his health lead him to seek relief. I cannot state the quantity of urine which may thus accumulate, as for some years I have adopted the practice of emptying a bladder very gradually when its water-logged condition has been discovered, through fear of exciting disorganizing inflammatory changes in its collapsing walls; but it must be very considerable—several quarts, certainly. In a patient consigned to me not long since by our president, the pressure was so great upon the iliac veins within the pelvis as to give rise to a bulky dropsical swelling of the lower limbs—all of which promptly disappeared when he had learned to relieve himself by the catheter. This gentleman was not aware of the cause of his condition, and was under the impression that he had been emptying his bladder regularly. I will remark here that, in cases where the urine does not flow readily or freely, it requires not a little acumen to determine always just how much of the diminished force and volume of the stream is due to the mechanical obstacle of a prostatic dam at the neck of the bladder, or even of stricture of the urethra, and how much to defective expulsive power in the muscular walls of the bladder itself. The only sure way to determine the existence of atony in a given case is to take an opportunity, when the patient has just urinated to the best of his ability, to introduce a catheter into the bladder; the amount of residual urine that flows will indicate the degree of atony. It would be wise, where it is desired to lead a patient, who presents these symptoms, to think favorably of the use of the catheter, to select a small, flexible instrument of proper form, warm it, oil it, and hand it to him with the suggestion that he should just slip it in himself—which he will generally undertake to do if judiciously encouraged. If he should succeed, and still more if he should find that, contrary to his expectation, any quantity of urine flowed through the catheter, he will be gratified by his success, and more ready to adopt the suggestion of its regular use—having had this demonstration of its necessity and feasibility. Cases of this kind, and they are more frequent than is generally thought, are usually managed with little difficulty. They take to the catheter readily through the obvious relief its use affords.

It is a noteworthy fact that the cases of prostatic obstruction, in which the condition of atony is developed early, suffer comparatively little pain. Such patients are not liable to the spasms which constitute so unpleasant a feature in the advanced stages of the alterations due to obstruction where there is full contractility, or only partial atony. It certainly has seemed to me desirable in many cases to favor the development of atony, and I have often wished for the means of bringing it about. I know of no better mode of doing this than the habitual use of the catheter and injections of warm water, pushing them very gently in the direction of over-distention. An analogous result follows the habitual use of tepid injections in the rectum.

And here, before I close, I desire to make a point which I deem of great importance to my case. It would seem as though Nature were disposed to offer us relief by using the catheter, for she has endowed the urethra with a singular degree of tolerance of contact with surgical instruments, and also with a capacity for an increasing tolerance by use. How otherwise do we explain the fact that we meet with hale and healthy old men who have been relying entirely upon the catheter for fifteen and twenty years to empty their bladders? Notice, if you please, that this tolerance of the urethra is not only for the temporary use of instruments, but for their use during an indefinite period. With the exception of trifling surface irritation, an occasional epididymitis, and, in one case from the country, a warty induration at the meatus, which I at first suspected to be epithelial degeneration, but which disappeared promptly on substituting a smaller and smoother instrument for the one in use, I have never, in quite a number of cases, seen any harm from prolonged use of the catheter. I think we all know of cases in which it has been used for a long term of years without complaint of injury from it; and, generally, the longer it has been in use the less complaint we hear. I was in company with an eminent English surgeon some eight years ago when we were interrupted for a moment by the entrance of a hale, ruddy-faced old gentleman who had a question to ask. When he had left, my friend remarked, "I taught that man to use the catheter more than twenty years ago, and he is well yet." He was a man of note. I saw the announcement of his death several years afterward, in 1870, at an advanced age. This is one of the cases of longest duration that I have knowledge of. I think, if we had means to determine the question, it would be found that, in all the instances where the catheter had been used with advantage for a long series of years, its use had been begun early, and that it had been relied upon entirely. In part the truth of this surmise is self-evident, for the necessity for its use does not arise until after the age of fifty. And this tolerance can be almost invariably attained if sufficient tact and gentleness, with adequate perseverance, be employed from the first in training the urethra. Civiale was a great master of the art in this respect. He would never have established lithotrity as he did, if he had not thoroughly grasped the wonderful capacity of the human urethra for training. Of course the task is easier when commenced early—as it is very desirable that it should be; and it is proportionately difficult after inflammation has increased the sensibility of the parts.

And now a word in regard to the question of relying upon the catheter entirely—which implies that the patient gives up all attempt to empty his bladder by his own effort in the natural way, and tries to adopt regular intervals for the introduction of the instrument. If he is already making water too frequently, this involves a gradual and careful training from its use once a day up to about five times—which seems to mark Nature's limit of tolerance, with benefit, in most instances; and, meanwhile, the employment of medicated injections for the purpose of allaying irritability, and, possibly, for a time, of anodyne suppositories.

The regular evacuation of the bladder, without effort, will of itself tend to relieve irritability; but, until tolerance of the catheter is reached, its introduction, by causing more or less pain, might seem to be doing harm. To reconcile this apparent incompatibility requires judgment and tact on the part of the surgeon, as well as a conviction that the measure is really necessary and that it is the best practice that can be pursued. This conviction will be reached, I think, by any one who, realizing fully the inevitable results of prostatic obstruction unaided by art, will carefully weigh the pathological facts I have glanced at. If it be true that all of the consequences of enlargement of the prostate, up to stone in the bladder and uræmic poisoning—except the hyperæmia at the vesical neck from the pressure of increasing bulk—are due directly to the persistent effort of the bladder to empty itself in spite of the impediment at its outlet, then it is impossible to avoid the inference that the power of helping himhimself with a catheter cannot be acquired too early by a patient with symptoms of obstruction from this cause. Again, if, after having learned to use the catheter once or twice in the twenty-four hours satisfactorily (and all the authorities justify and recommend this degree of reliance upon art), then, the patient's calls to urinate in the intervals are still too frequent, or if the act continues to be in any respect imperfectly performed, it is evident that the pathological changes being caused by the obstruction are still progressive, and that to arrest them definitely he must make up his mind to give up all effort to pass his water in the natural way, and work up to the entire substitution of the catheter. This is a decision which is usually unpalatable to the patient, but it is a legitimate deduction from experience, and the only safe course; he must be convinced that it is not the surgeon who asks him to give up a life-long privilege, but that Nature is actually depriving him of it, and that he is striving foolishly against the inevitable, and injuring himself fatally by his ineffectual efforts to help himself. And here the great fact of tolerance comes to our aid, for the facility which has already come to him by practice in relieving himself predisposes the patient in some degree to rely more and more upon the catheter.

A few words concerning instruments and their mode of employment in training the urethra, and I have done.

Civiale's training of the urethra had for its object to beget a tolerance of the instruments with which he desired to grasp a stone in the bladder with the design of reducing it to powder. He always commenced with the old-fashioned wax bougie, made by dipping hempen threads into melted wax, which in former times surgeons made for themselves. A bougie of this kind, when warmed, is very soft and flexible. His habit was to introduce this very gently, and wait until all irritation had subsided—several days if necessary, before a second introduction; and to proceed systematically in this manner, gradually shortening the interval as the operation was well borne. I know of no better method of training the urethra to tolerance of the catheter. The skill of the instrument-makers, stimulated by the suggestions of surgeons, is constantly improving the style and quality of our urethral instruments, so that we have bougies now made to our hands of the most perfect finish. The softest and best to begin with is the French conical olive-pointed bougie, using a catheter of the same pattern only after the urethra has learned to tolerate the bougie. The French make these with a permanent curve for prostatic cases. It is always wiser to induce the patient to use the instrument himself from the first, if possible, and for the surgeon to content himself with the position of teacher. Of course, where the urethra has become altered in shape or direction by the enlarging prostate, more skill will be required in selecting the best instrument to suit each case. The most common obstacle encountered by the beak of the catheter is the bar or third lobe which grows up out of the floor of the urethra at the very entrance of the bladder. To ride over this, Mercier devised his elbowed catheter, of variable angle, which is a useful instrument, as its beak must be kept always, of necessity, in contact with the roof of the urethra where there is no obstacle to its slipping into the bladder. The English use more frequently a catheter made of firmer material which will receive an exaggerated curve at its beak while warm, and, after being dipped in cold water, retain it long enough to get into the bladder pretty certainly when properly guided. This instrument wears better, and is preferable to any other for permanent use, but more instruction is required to insure its successful manipulation. Lastly, for some cases a metallic instrument of large, peculiar, and exaggerated curve, as may be required by the peculiarities of the case, will be found more suitable; and, in the country, where flexible catheters are not always at command, it is often preferable. In short, each individual case presents its peculiar features, and the best instrument for permanent use must be selected for it and fitted to it by the surgeon's skill and experience. As in the somewhat analogous appliance, the truss, there should be always a reserve of instruments—at least a duplicate—to fall back upon in case of accident or breakage. My remarks, it will be observed, are not designed to meet the wants of those difficult cases of catheterism which present themselves under the pressure of retention of urine—as happens, indeed, with too large a majority of the prostatic cases we encounter in practice—neglected prostatic cases we might call them; what I have said is applicable only to cases selected for training in the use of the catheter as a safeguard against danger from prostatic obstruction.

ART. II.—*The Philosophy of Uterine Disease, with the Treatment Applicable to Displacements and Flexures.*[1] By THOMAS ADDIS EMMET, M. D., Surgeon to the Woman's Hospital of the State of New York.

IT would be difficult to present a subject on which a greater diversity of opinion exists in the profession than the one I now have the honor of offering for your consideration.

This difference is not only as to cause and effect, but to as great an extent in relation to the proper means of treatment. Indeed, at first sight, this great difference is incomprehensible, and it seems impossible to reconcile the extreme views held by men of honest purpose and equally based on personal observation. But experience has long since taught me that a medium course is the most successful one, as from this stand-point we can utilize and better appreciate the views based on the practice of either extreme. In years past I have honestly overcome all obstructions, and by the aid of the knife I have opened up the uterine canal to such an extent that it was impossible for any mechanical obstacle to exist; and I did not cure my patients. In turn I have devoted no little mechanical skill to overcome every displacement, and have succeeded beyond my expectations; yet the results were not satisfactory. At length I became confident that local congestion and inflammation were the causes of the evil, producing hypertrophy, hyperæsthesia, versions and flexures. I directed my treatment now exclusively to relieving the congestion, as I will describe hereafter. My results were better, for I found that as I diminished the congestion, the hyperæsthesia disappeared, the flexures lessened in degree, and there was, with less hypertrophy, a great improvement in the versions; but my patients frequently relapsed, and the results were not such as I had anticipated. I ultimately recognized the fact that there was a stage in the treatment of almost every case when mechanical support was indispensable as an adjunct, and under certain circumstances the use of the knife could not be ignored. The fact also presented itself to me that in a large number of cases the local condition was secondary to that of the general system, and in no case could we conscientiously overlook the connection. I became convinced that, as a rule, the local difficulty in the beginning was the effect, but a point was reached ultimately when the uterine condition became the most prominent, and exercised a direct influence in reducing still further the tone of the general system. In addition, experience taught that we cannot restore the female to health by local treatment alone, nor by devoting our attention exclusively to the general condition can we relieve the local one. I regard some degree of anteversion as a normal position of the uterus, while retroversion is always incident to, and a flexure is an exaggeration due to, causes to be considered hereafter.

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[1] Read before the Medical Library and Journal Association of New York, June 5, 1874.

Any conceivable amount of deviation from a normal standard may and does frequently exist without discomfort, so long as the circulation remains unobstructed and the proper functions are performed. Deviations may result from congenital causes, or from accident, and a degree of tolerance may become established which ultimately seems to be a normal condition for the individual. Yet there is in each case a limit to the immunity, as sooner or later Nature exacts the penalty. A retroversion may exist for years without producing inconvenience, but from some accidental cause the general health may become impaired; the vaginal walls will gradually lose their integrity, a miscarriage, or some other cause, will produce an undue congestion, with enlargement of the uterus, and we have at length the most urgent symptoms presenting themselves for relief. There is less immunity from flexures of the body of the uterus, yet a moderate amount of disease may be borne so long as the general health remains good. A flexure of the cervix below the vaginal junction, at a right angle even to the body, or a partially constricted os, may produce but little discomfort for an indefinite time, beyond a slight dysmenorrhœa in the unmarried female; but in the wife, if the condition has produced sterility, we are at length forced by a train of nervous symptoms to recognize a local cause of irritation. In other words, anteversion may exist without causing irritation of the bladder, retroversion without symptoms of prolapse or obstruction to the rectum, and flexure without dysmenorrhœa, so long as the nutritive functions maintain their integrity.

Impaired nutrition, as the cause and not the effect, depreciates the nervous force, and without this needed stimulus functional derangement naturally follows, a loss of balance results, and we have congestion or the opposite condition. Congestion produces enlargement of the tissues, and it may remain passive or result in inflammation, while a want of nutrition causes atrophy. Congestion is always the result of some local irritation, a condition which is but temporary in duration if the reparative powers are in a state of integrity. Congestion, however, does not imply inflammation, although the latter cannot have a beginning without it. If the congestion reaches a degree sufficient to establish inflammation, we have at once instituted a distinct train of symptoms which is accidental and secondary to the primary condition. The terms congestion and inflammation are synonymous with many in application to uterine disease, and it leads to confusion. Inflammation cannot exist without molecular death, and its products are easily recognized until the injury has been repaired. We may look in vain, *post mortem*, for any evidence of a previously-existing endometritis, so called, or ulceration of the cervix, as it is termed. We find the tissues blanched, the blood from the capillaries having passed into the larger vessels as the heart failed in keeping up the supply, but there is neither loss of tissue on the surface of the mucous membrane beyond the epithelium, if so much, nor are products of inflammation to be found in the tissues of the organ itself. Inflammation can only exist in an acute form, although its products may remain for an indefinite period. Therefore the term chronic inflammation is a misnomer.

From congestion and increased weight the uterus will naturally settle into the pelvis, and a version mechanically results toward the heavier side. The neck of the uterus soon becomes, as it were, a fixed point, and can move but forward in the axis of the vagina, while the body above becomes bent on itself in the opposite direction. Hence, a flexure of the body, a chordee, as it were, to be augmented by any increase or obstruction to the circulation. Violence or an accidental cause may produce partial retroversion, and, if the fundus advances into the hollow of the sacrum beyond a certain point, we have at once two forces operating, in opposite directions, to produce a retroflexion. The cervix becomes pressed upward against the anterior wall of the vagina, which can only yield to a certain degree, and, with the weight and downward pressure in the opposite direction, the body of the uterus is gradually bent upon itself. We have two causes of flexure which may be termed congenital, or at least having an origin previous to puberty. As the uterus becomes developed, the growth of the cervix is, in length, out of proportion to the body. Gradually, from a want of room, the cervix slides along the posterior wall, in the direction of the least resistance, until it presents in the axis of the vagina, causing a sharp flexure just at the vaginal junction. In a narrow vagina, with a deficiency or absence of the posterior *cul-de-sac*, a degree of retroversion must exist. At puberty, with increased weight of the uterus and from other causes, the fundus gradually settles into the hollow of the sacrum, and we have a flexure produced in the same manner as I have shown to follow this displacement when resulting from accident.

Congestion of the mucous follicles, limited to the cervix or extending through the uterine canal, with increased secretion and some enlargement of the organ, is the most common form of uterine disease. In my experience, some degree of flexure of the body, with an increase of anteversion, has been more frequently met with than in the displacement backward. Partial obstruction of the uterine canal, at a given point above the vaginal juncture, is caused by flexure, and is increased by congestion, with passive œdema of the mucous membrane and possibly of the submucous tissues. A resort to surgical means for the relief of this condition has been a favorite procedure with many in the profession. For years I have not divided the cervix laterally except for the removal of fibroids. At an early date in my experience, I satisfied myself that a flexure of the body could not be relieved by a lateral division, even if extended to the vaginal junction, and that the practice was based on unscientific principles. I have never seen a case permanently benefited by the operation, except in rare instances, where pregnancy fortunately took place during a slight remission of symptoms, due to the revulsive action attending the process of reparation. I can, moreover, state that I have never known the malpractice of any other surgical procedure followed at times by such evil consequences. When practised by skillful hands, under proper surroundings, and with the requisite after-treatment, the operation is attended with comparatively little risk, but without benefit. It has been regarded by the profession at large as a simple operation; and it is certainly one in execution, but it requires no little experience to decide when it can be practised with safety, even when it is advisable. I believe that there are but few of us who have not in years past seen the most deplorable results following the indiscriminate practice of this operation, through reckless inexperience and neglect afterward.

November 28, 1862, I operated on a patient, who had received, in labor, a double lateral laceration of the cervix to the vaginal junction, by denuding and bringing together with silver sutures the anterior and posterior flaps. It was a case in my private hospital. I was assisted by Dr. G. S. Winston, then my assistant, and I believe Dr. T. G. Thomas was also present at the operation. This lady suffered from hypertrophy of the uterus, with an intractable erosion covering a cervix apparently some two inches in diameter. The erosion by great care had been several times healed, but its recurrence took place as soon as she began again to exercise. She had been some time under treatment before I appreciated the laceration, as the tissues had undergone fatty degeneration, and were so softened and flattened out as to give no evidence, on inspection, of the real condition. My attention was first attracted to the width of the cervix in comparison with the body, during an examination with the finger, as the patient was lying on the back. The relative size of the cervix to the body of the uterus was as the top of a half-grown mushroom would be to its stalk. By seizing the anterior and posterior portions of the cervix with a tenaculum in each hand, I found that, when the flaps were brought into apposition, the inverted portion rolled inward to the canal, and the cervix was in fact then but little larger than natural. The remedy at once suggested itself to me, and I performed the operation to which I have referred, the effect being that the hypertrophy rapidly diminished, with no recurrence of the erosion afterward. It was evident that the hypertrophy and erosion had been due to the rolling out of the tissues, as the flaps were forced apart on standing, by the posterior one catching on the recto-vaginal septum, while the anterior flap was crowded forward in the axis of the canal, in the direction presenting the least resistance. This case was one of great importance to me, for it has been my practice from that time to close all lateral lacerations which have passed under my observation as a result of labor. It led me also to appreciate exactly the same condition as a result of lateral division of the cervix in all cases where the operation had been thoroughly done; and I have since in every instance endeavored to correct the damage by reuniting the flaps before resorting to any other treatment. I know of no one previous to this time who had recognized this chronic condition as a cause of hypertrophy and extensive erosion, when resulting from childbirth, or as a consequence of lateral division of the cervix; and I believe the above operation to have been the first practised for its reparation. In a paper entitled "Surgery of the Cervix," published in the *American Journal of Obstetrics*, and read before the Medical Society of the County of New York, February 8, 1869, I have presented my views at greater length in reference to this condition and operation.

When the flexure occurs at or below the vaginal junction, it is seldom in the unmarried that we are called upon for the relief of any serious uterine disturbance until later in life. Dysmenorrhœa, it is true, always exists in the beginning of the flow, but is relieved as soon as it has become established, while the contrary is the case when the flexure is in the body of the uterus. In the latter condition the dysmenorrhœa does not begin until menstruation has already made its appearance, it then increases in degree, and continues until the flow ceases. In the first instance, the long and narrow cervix becomes thicker, shorter, and straighter, in consequence of the menstrual congestion, so that the mechanical obstruction is removed for the time. With flexure of the uterine body, in either anteversion or retroversion, the obstruction becomes exaggerated on increased congestion. This is due to the fact that the disease is confined chiefly to one side of the organ, while the circulation is comparatively unobstructed on the opposite side.

For the relief of the flexure at the vaginal junction, I always divide, with scissors, the posterior lip backward in the median line. This operation is attended with but little risk, if the case is properly cared for, from the fact that the organ is otherwise in a comparatively healthy condition; unless the history of the case points to the existence of a previous attack of cellulitis, resulting from some accidental cause, there will be but little danger of this complication from the operation. Quite the contrary will be the case when the body has been involved in either anteflexion or retroflexion of long standing, for a certain amount of perimetritis is almost certain to have existed at some previous date, leaving a condition afterward requiring but a slight provocation to reëstablish the inflammation in a more serious form. The ultimate result of the operation is to bring the neck to a natural length, for, by a division of the circular fibres, the longitudinal ones gradually retract, and the canal becomes straight; were other advantages equal, the backward operation is preferable to the lateral one, as the cervix is divided only on one side, and the risk from hæmorrhage is less, as the circular artery can be easily avoided. Moreover, there will be no gaping or rolling out of the edges, after they have healed, as the flaps are kept sufficiently in contact by the lateral walls of the vagina. Although there may be no bleeding at the time of the operation, the use of a tampon for some ten days is a necessary precaution to guard against subsequent hæmorrhage. The incision must be kept open by gently drawing the point of a sound through the angle of the wound, and the edges apart by daily dressings of cotton pledgets saturated with glycerine. To guard against inflammation, it is indispensable that the patient should be kept in bed, and protected from cold, until the parts have healed. The object of the operation is to remove a very common cause of sterility, and one liable to result in retroversion, from sexual intercourse, with prolapse afterward, so soon as the body becomes forced over in line with the axis of the vagina. In the unmarried the dysmenorrhœa is relieved by the operation, the tendency to retroversion obviated by shortening the neck, and an exciting cause of future disease removed by allowing of a free escape of the secretions from the canal.

When a flexure of the body has long existed, the tissues, at the point of greatest constriction, gradually undergo fatty degeneration from pressure, and absorption takes place, causing a permanent deformity, as after caries of the spine. When a point has been reached, after careful treatment of such a case, at which all tenderness on pressure has been removed, it is often judicious to divide the cervix backward, and to incise forward the seat of flexure above, sufficiently to open the canal. This will facilitate the application of any after-treatment which may be found necessary to the canal above, and guard against a relapse from any mechanical obstruction afterward. But, if done too soon, without the proper preparation and the requisite subsequent care, all previous gain will be lost by pelvic cellulitis, and even general peritonitis may result. The patient's life may be saved for the time, but there is seldom vitality enough remaining even to regain the condition existing previous to the operation.

During the time I held the position of surgeon-in-chief to the Woman's Hospital, from September 1, 1862, to May 1, 1872, there were 1,842 patients treated under my charge. This operation was performed sixty times in the institution, as will be seen by the following statement taken from the records and furnished me by Dr. William H. Baker, the house-surgeon. From September 1, 1862, to the close of the year, eight operations; 1863, nine; 1864, six; 1865, four; 1866, three; 1867, three; 1868, five; 1869, six; 1870, thirteen; 1871, one; 1872, to May 1st, two. During the year 1870 four lateral operations were performed for the removal of fibroids, making a total of fifty-six operations for flexure of the cervix. The operations were all, I believe, performed by myself, except during the year 1870, when my assistants, Dr. J. G. Perry and Dr. Bache Emmet, operated six times—the former five times, the latter once. Three cases of serious cellulitis followed these operations, but from which complete recovery took place; one death occurred from general peritonitis, coming on after the patient was well enough to be up, and it could be attributable alone to her own imprudence. This patient was sent to the hospital by Dr. Baur, of Brooklyn, but now of St. Louis; after permission had been refused, she took a cold bath with her windows open, and was seized with a violent chill before she had completed her toilet; it was followed immediately by a most violent attack of peritonitis, and death resulted in a few days.

During the past thirteen years I have operated some forty-nine times in my private hospital, and have in the same period treated two thousand and thirty-six uterine patients, with one death and one serious case of cellulitis, terminating in pelvic abscess, from which recovery took place after an illness of two years. The cause of death was peritonitis, occurring in a case where I operated the day after her arrival from a long and fatiguing journey, to oblige her physician, who wished to return home without delay. I have since held myself culpable for the death of this patient, so far as to have deviated from my rule in never operating until a patient has been sufficiently long under observation for me to appreciate fully her condition and to prepare her properly for it. The pelvic abscess, following an attack of cellulitis, was brought about by the patient's imprudence in sitting up and exposing herself to cold in her night-dress, and bare feet. To the best of my recollection, I have performed this operation but twice outside of my private hospital, and in both instances the patients remained under the charge of their physician. One of these cases, on whom I operated for retroflexion, died ultimately from the effects of a pelvic abscess. It occurred some years ago, before I had learned from experience that in cases of retroflexion a certain amount of cellular inflammation has previously existed, and that its products are seldom if ever absent so long as the organ remains in this position. The lady was a foreigner with whom I was unable to hold any personal communication; the operation was performed at a large hotel where she did not get the proper care, and I have no doubt she suffered from exposure.

The number of cases treated in private practice has been given, that they may be added to those cared for at the hospital, from the fact that many of the patients were sent to the institution by me specially for the operation—as otherwise the proportion would be too large. The ratio to the whole number treated can be but an approximation, however, since I can give no estimate of the number seen by consultation in private practice, or with accuracy the number treated in the outdoor department of the institution; and yet many of the operations performed were on patients received from these sources, although the proportion of operations to the given number of uterine cases under treatment is larger than it would be in reality, could we arrive at the total number under observation, yet it is sufficiently small to show that this operation has never been with me the rule of treatment.

We will now consider briefly the mechanical means to be resorted to for the relief of displacements. I am ignorant of any instrumental means, safe or reliable, for correcting the position of an anteverted uterus. Great relief may sometimes be obtained, on increasing the degree of anteversion, by the use of a pessary with a long-enough curve in the posterior *cul-de-sac* to lift the neck of the organ from the floor of the pelvis. On thus slinging the organ, as it were, with the fundus resting against the pubis and the cervix elevated, the circulation will be improved, and the irritability of the bladder lessened. We gain time by this means, and enable the patient to take more exercise, since we break the force or jar which would be otherwise transmitted to the organ so long as the cervix rested on the floor of the pelvis. The various devices for forcing the uterus into an upright position to a point which the organ likely never occupied even when in a healthy state, are faulty in theory and wrong in practice. If we can lift, by any appliance, the uterus to a point where the obstructed venous circulation can be relieved through the neighboring tissues, which have been put on the stretch by the sagging organ, it is all that can be accomplished by such means, and the mere anteversion is of no consequence. Any instrument making direct pressure on the anterior wall, the chief seat of disease and the point of greatest tenderness, must prove a source of irritation. I deprecate even more the intra-uterine stem-pessary, for, had this instrument been the device of the Evil One himself, its use could not be productive of more danger. Its use in a flexure seems as rational as would be the introduction of a straight steel sound into the urethra for the relief of an existing chordee; the penis might be straightened by force, but the cause of difficulty would certainly not be removed. The treatment of retroversion of the uterus is more satisfactory, mechanical means can be better applied, and the good resulting from relieving the obstructed circulation is well marked on restoring the organ to its natural position. A recent case of retroversion can be reduced with comparative ease, and an instrument can readily be adjusted which will keep the organ so far anteverted as to render it difficult for it to return to its former position. If, however, the displacement has been of long duration and the uterus has become flexed, the condition will, in all probability, have acted as a source of irritation in causing cellulitis to a greater or lesser extent. Even should adhesions not have formed, a degree of congestion will have been kept up so as to require but a slight provocation to establish a fresh attack of inflammation. It is therefore wise to proceed with the greatest caution in any attempt at reduction until we have fully appreciated the condition. Should we find the uterus firmly bound down by adhesions, it can be replaced in time, for with care, patience, and good judgment, in not attempting too much in a single effort, these bands will gradually become so stretched and attenuated as to offer no longer any resistance. The utero-sacral ligaments, in a state of health, are scarcely worthy of note, being formed but of a reduplication of the peritonæum and a little cellular tissue. These, however, become frequently thickened, and, having closed partially over an enlarged and retroverted uterus, can be readily mistaken for adhesions, in consequence of the obstacle they sometimes present in an attempt to restore the organ to its normal position. I have long accustomed myself to rely on the index-finger for the reduction of this displacement, and with a little practice it becomes the most reliable means we can employ. It is one certainly attended with the least risk, as we are able to appreciate at once the point and extent of resistance. When we have once ascertained the fact that there are no adhesions nor lurking inflammation in the neighboring cellular tissue, an experienced operator may, with comparative safety, use the sound or any other means to which he has been accustomed. But the method which I will describe is attended with less pain, and I believe with the least danger, under all circumstances. The patient is to be placed on the back, with the knees flexed, and the hips drawn down to the edge of the operating table or chair. Introduce then the index-finger into the vagina, and direct the point of a tenaculum, which is to be hooked into the posterior lip, just within the os. This instrument is to be used for the purpose of gently drawing forward the organ, sufficiently toward the vaginal outlet, that we may be satisfied the fundus is distant enough from the hollow of the sacrum to pass the promontory when elevated. At the first attempt this must be done with care, and if a point is reached at which great pain is caused, we must then desist. By this manœuvre the uterus has, of course, become more retroverted than before. To correct this, the perinæum should be pressed firmly back, that the finger in the vagina may be passed as far up behind the uterus as possible, and made at the same time to lift up the organ. When the uterus has been thus elevated, and while it is being held up by the finger, the cervix is suddenly carried in an arc of a circle, downward and backward, by means of the tenaculum held in the other hand. By aid of the finger in the vagina, the fundus has been pressed up against the utero-sacral ligaments. These ligaments, having been put slightly on the stretch, gape as the tension is suddenly relaxed by carrying the cervix backward, and the fundus slips between them. The finger must be then placed against the anterior lip, the tenaculum withdrawn, and the organ anteverted by passing the finger repeatedly down the anterior face of the uterus, so as to press the cervix downward and backward into the hollow of the sacrum. If an unusual degree of pain is experienced at any point, we must use our judgment as to how far it may be safe to proceed, or desist entirely for the time being, until all active symptoms have subsided under the proper treatment. When successful, I frequently make no attempt, by mechanical means, to hold the uterus in position, until I have again replaced it and have satisfied myself that no tenderness on pressure exists at any point which would come in contact with the pessary to be used. The form of the instrument should be adapted to carry the cervix well back, and with a sufficient curve in the posterior *cul-de-sac* to keep it elevated, so that the organ must remain anteverted. I have been consulted, more than on any other point, as to the best form of pessary to be used in practice. A difficult question to answer, as there is some individual peculiarity about nearly every case, on the appreciation of which to a great extent success will depend. Some modification of Hodge's closed lever pessary, however, will be found applicable to the largest number of cases, as it conforms more than any other to the natural shape of the vagina. A pessary, to do no harm, should be small enough to admit of the passage of the finger between it and the vaginal wall at every point, while the patient lies on the back. It must be just large enough to give the needed support to the uterus, and be at the same time small enough for the vagina to regain gradually its natural size. The elasticity of the canal is sufficient to admit of a dilatation to the extent of the pelvic excavation ; but it will prove an exception to the rule if a pessary, properly curved, need ever be over three inches in length and an inch and a half in width. Whenever it is possible to avoid making the pubis the chief point of support, I do so. But it is often unavoidable in cases of long-standing retroversion, where the anterior wall of the vagina has become shortened in consequence, and in cases of prolapse of the posterior wall, from laceration of the perinæum. But where the vaginal outlet is not too large, and the posterior *cul-de-sac* is of a natural depth, the principle of the lever-pessary is applicable to nearly all cases. The fulcrum of this double lever rests on the posterior wall of the vagina at the bottom of the *cul-de-sac*. It should be so curved in reference to this *cul-de-sac* and posterior wall at one extremity, and at the other end bent with a lesser curve in the opposite direction, so that the instrument may be balanced. As the patient stands on her feet, the weight of the uterus will cause the other end of the instrument to rest against the anterior wall of the vagina, near the neck of the bladder. On assuming the horizontal position, the instrument will present in the axis of the vagina near the outlet. It will thus compensate itself by a change of position, so that it cannot, from continued pressure at any one point, cut into the vaginal tissues. A longer curve will be needed in the *cul-de-sac* where retroversion has existed, than with prolapse from hypertrophy, where the object is simply to lift the organ from the floor of the pelvis. In the latter condition, the upper portion of the vagina will be more dilated, as a rule, than the lower part, and the instrument must be made to correspond. The closing in of the vaginal walls around an instrument, made larger above, has the effect of crowding it upward in the canal. When even the outlet is larger than natural, and dilated from a prolapse of the vaginal walls, we must restore the canal to a natural size and close the laceration through the perinæum, by a surgical operation, before an instrument can be worn with advantage for correcting the retroversion. An instrument, under the circumstances, to be used as a temporary means of relief, must be made wider below, with the greater curve also at this point, so as to get the needed support from behind the pubis, and with a depression to guard the neck of the bladder from pressure. We find occasionally a difference in the curve on each side of the symphysis, so that, if an instrument is made symmetrical, it will bury and cut into the soft parts covering the lesser curve. On the corners of the instrument there should be no sharp angles, but a gradual curve; and frequently it is necessary to bend the corners downward, to correspond with the roof of the vagina at this point. In the posterior *cul-de-sac* the instrument should never be so abruptly curved as to make pressure directly against the uterus at its junction with the vagina, but at some little distance beyond. The circulation in the neck is easily obstructed by pressure at this point, so that it will soon cause an erosion about the os; and frequently an intolerance to the presence of any instrument in the *cul-de-sac* becomes established, in consequence of irritation or inflammation of the lymphatic glands found in this neighborhood. The shorter the vagina, the straighter must the instrument be made, for if curved too much it will rotate and remain across the axis of the canal. A straight instrument has to be wider in the middle, in proportion to its length, than a curved one. The widest part of the vagina is from one sulcus to the other, while the lateral walls and posterior surface of the canal form a concavity; consequently, a curved instrument should be made rather smaller in the middle, as its support is chiefly derived from the posterior wall. It is a very common occurrence to find an instrument, when too wide, cutting its way along the lateral walls of the vagina, at the bottom of a deep fold formed as the pessary is carried downward from the pressure above. It may be accepted as a rule that, so long as a patient can recognize from her feelings that she is wearing an instrument, it either does not fit, or she is in no condition to wear one; and in either case it will do her harm. So soon as an instrument has been properly adjusted, and there is no tenderness on pressure at any point in the vagina coming in contact with it, the patient will be unconscious of its presence. I prefer at first the use of block-tin rings, on account of their greater malleability. After modeling one of a proper size to the case, and having fairly tested its use, I then have the instrument reproduced in aluminium, silver gilt, or hard rubber. These are, in brief, the main points to be observed in adjusting a pessary properly, but in each case there will be a necessity for some modification in consequence of individual peculiarities. Success will depend entirely on an accurate appreciation of these differences, and on the mechanical skill innate to the operator. To a want of both or of either gift, must be attributed the unsatisfactory results so often complained of.

The uterus, an erectile organ, and surrounded by a mass of blood-vessels passing in every direction through loose cellular tissue, is directly affected by any increase or diminution in the neighboring circulation. We must appreciate that in no other part of the body have we such a matted net-work of vessels in the same space. In consequence of the erectile character of all the tissues, these vessels become varicose from any continued obstruction to the circulation, and have an almost incredible venous capacity. As a stream of water will saturate the ground and lose itself in a marsh, so will the circulation through the pelvic cellular tissue, and become in disease equally sluggish. On theoretical grounds the difficulty could be easily overcome by local bloodletting; but the chief objection to the treatment, if there were no other, would be the already reduced general system of the patient. In this over-distended condition of the veins, the balance has been lost, and they are no longer able to return to the general circulation the same quantity of blood received by them from the arterial capillaries. Local depletion would, therefore, act rather as a source of irritation, to increase the congestion, where this loss of tone existed in the coats of the vessels. There are certain conditions where a few leeches applied to the anus, or free scarification of the cervix, may be resorted to with great benefit. We will take, for an example, a sudden suppression of menstruation, from exposure or any other accidental cause, where the congestion is almost entirely arterial, and above the secreting point, as it were. Under such circumstances by temporarily lessening the congestion we assist the vessels, which have not yet lost their tone, to regain their normal size; the circulation is stimulated, soon the organ is able to resume its function, and the equilibrium is restored. If we apply leeches to the uterus of a female who has been long suffering from local disease, we will find although a momentary sense of relief may have been experienced, that the organ has increased in weight and is lower in the pelvis than before. As her general vitality had been previously lowered, even a slight additional loss of blood will be found sufficient to greatly increase the previous hyperæsthesia.

There can be no restoration to health, in either the local or general condition, so long as anæmia exists, since the blood has lost those elements by which organic life is properly stimulated. Throughout the menstrual life of the female, the organs of generation exercise a dominant influence over the nervous system; in health, through the reflex system, they act as the fly-wheel to the mechanism. Therefore, so soon as any serious local difficulty of a chronic character is established, the nervous force becomes lowered, general functional derangement supervenes, and impaired nutrition follows as a sequence. Although we are unable to cure the local difficulty until we have improved the general condition, yet we can set the ball in motion by lessening the local source of irritation. Unless we can control the pelvic circulation, and at least impart a temporary tone to these vessels, it will be found in the end that little has been accomplished. We have our remedies for local application within the uterine canal, and much can be accomplished by mechanical means when appropriate. But in the simple remedy, hot-water vaginal injections, we possess the most valuable means of relief when properly administered. Although it has now been many years since this remedy was first introduced into practice, but a small portion of the profession appreciate its use or understand its action. It is generally conceived that the application of heat by this method relaxes the vessels and increases the congestion. This it does at first, but, if prolonged, the capillaries are excited to increased action; as they contract, the tonic stimulus extends to the coats of the larger vessels, their calibre becomes lessened, and, with an approach to healthy action, the congestion diminishes. No one applies a hot poultice with the view of increasing the congestion of the parts, but, as any old woman would explain it, "to draw the inflammation out," that is, to lessen the congestion by causing contraction of the vessels. That such is the effect of the continued use of a poultice is shown by the bleached and wrinkled appearance of the tissues after its removal. We can cause capillary contraction also by the use of cold, and the effect is even more prompt, but, when reaction comes on, the tissues will become more congested than before. In brief, the immediate effect of cold is contraction, and with reaction we always have dilatation; heat, on the contrary, causes dilatation at first, and its action is followed by contraction afterward.

If a woman be placed on her back, with the hips elevated by a properly-shaped bed-pan under her, and a gallon or more of hot water at 98° or of a higher temperature be slowly injected into the vagina by means of a Davidson's syringe, the mucous membrane will become blanched in appearance, and the canal as diminished in size as if a strong astringent had been administered. While the hips are elevated, the vagina will retain, during the injection, a large quantity of water, which by its weight will distend every portion of the canal, so that it will come in direct contact with the whole mucous membrane under which the capillaries lie. The vessels of the neck and body of the uterus pass along the sulcus on each side of the vagina, and their branches encircle the canal in a most complex network. The vessels of the fundus, through the veins of which the blood passes by the liver back into the general circulation, communicate with those below by anastomosis. We can thus, through the vagina, influence directly or indirectly the whole pelvic circulation. We can so diminish the supply as not only to check congestion, but we can literally, by the use of hot water, starve out an inflammation. I know from my own personal observation that several of these injections a day, at 100° to 106°, will abort an attack of cellulitis if resorted to early enough, and their use persevered in, with the aid of rest and anodynes. These injections exercise a most beneficial effect on the reflex system by allaying the local irritation. I know of no better means for removing the nervousness and sleeplessness of an hysterical woman than a prolonged hot-water vaginal injection, when administered by an experienced hand. These injections will frequently soothe a patient to sleep in less time than could be done by any anodyne in the pharmacopœia. To receive permanent benefit from their use, they must be continued until the patient is restored to health. They should be given at least once a day, and the best time is on retiring at night. The only position in which the patient can receive any benefit from them is on the back, with the hips elevated, as I have described. She cannot administer them properly to herself, and I know of no arrangement, by siphon or other means, which can take the place of an intelligent nurse. As the patient improves in health, the quantity of water can be diminished, and the temperature lowered until the injections are discontinued from daily use, but for some time they should be employed for a few days after each period.

In 1859 I first used tepid and then hot-water injections, in the treatment of a member of my own family; at that time and for years afterward cold-water injections, at a low temperature, were used by every one in the treatment of uterine disease. I continued to employ hot injections in my private practice until the autumn of 1862, when I was appointed to the charge of the Woman's Hospital. From that date to the present, in this institution, and in my private practice, nearly every patient coming under my care has been treated by this method, merely varying the quantity of water and the temperature according to the circumstances of the case.[1]

The patient will be in a better condition for getting out into the open air after we have lifted up a uterus with version, or prolapsed, by an instrument to aid in restoring the circulation through the organ. The general condition will, however, in all probability, yet admit of little local treatment. Beyond the vaginal injections, to which a little chlorate of potash, or any other remedy indicated, may be added, with a daily pledget of cotton saturated with glycerine, and introduced into the vagina, our treatment will be limited until we have directed our attention somewhat to the general system. In a case of long standing we will scarcely find an organ in the body which is not suffering from functional derangement. The connection of one function with another is so intimate in the organic circle of nutrition that the derangement of any one soon jeopardizes the integrity of the whole.

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[1] The action of hot water in surgery, as a means of preventing hæmorrhage, was first brought to my notice by the late Dr. Pitcher, of Detroit. He stated that for many years he had been in the habit, when operating, of applying to a bleeding surface sponges taken from water as hot as could be borne. His explanation was, that, after a clot had formed in the mouth of a dilated vessel, the continued application of heat caused it, on reaction, to contract so firmly on the clot that secondary hæmorrhage could not oc-

The result will be enfeebled digestion, a sluggish portal circulation, and imperfect respiration; so the blood is no longer oxygenized properly, and with but partial elimination it is returned to the general circulation in a condition not unlike that of a cold-blooded animal. The kidneys are overworked, and the skin is inactive; repair to a great extent has ceased, and a general waste is the rule. In addition, we often have, combined in the same subject, the pernicious effects from the habitual use of alcohol in some form, anodynes, and coffee. The first step must be at once, without a compromise, to break up the dependence upon either of these now active poisons to the nervous system. Their indiscriminate use having in the beginning aided not a little in bringing about the general wreck, a continuance would but defeat the best-devised efforts for a restoration. We can aid digestion but little at first by the use of medicines; our chief dependence must be simple and nutritious food, small in bulk and often administered.

An attempt must be made to bring about a healthy action of the skin by means of hot-air baths, general friction, and ex-

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cur. With his views of the action of heat, when continued, on the coats of vessels, and my own in regard to the condition of the circulation in the pelvis, came the first suggestion to my mind of its application in the treatment of uterine disease. I have been so thoroughly identified with this mode of practice, that it seems scarcely necessary to claim the priority. Certainly, no one in this country is on record as an advocate for the practice previous to myself; and, as far as I have been able to ascertain, the same is true in regard to the practice of gynæcologists abroad.

posure of the body to the direct action of sunlight. With any improvement in the condition of the skin we will relieve, through the circulation, the over-taxed kidneys, the portal system, and indirectly assist digestion. The action of sunlight is beneficial in relieving the anæmia, by creating a rapid tolerance of the stomach to the administration of iron. The use of iron, in any form, and sunlight, must go together, for, without the aid of the latter, ferruginous preparations are not properly taken up by the stomach, and must only act as an irritant. As we lessen the anæmia and improve the condition of the blood, the capillary action will become more vigorous, and the power of assimilation and elimination must increase ; we can then do more by medicinal means to assist digestion. We can relieve the portal system by the use of mild salines and other remedies, and by doing so we remove the chief obstacle to the proper return of the venous blood from the pelvis into the general circulation. As we continue the use of baths, and friction to the whole surface of the body, the patient gains strength, and is able to exercise and remain more in the open air. With increased action of the skin, we will find that the bowels can be better regulated, and constipation relieved by less aid from artificial means. Having advanced so far in the general treatment of the case, the physician will have already thoroughly tested his knowledge of the practice of medicine, and by the least resort to drugs his success will have been in proportion to his resources.

After we have appreciated any existing displacement of the uterus, or simple prolapse from enlargement of the organ, due probably to imperfect involution, the most common cause, our attention will be directed to the existence of an erosion or excoriation of the epithelium ; but so-called ulceration of the cervix is a condition in itself of but little moment, as it will heal by attention to cleanliness, and on lessening the discharge from the uterine canal. In practice we cannot appreciate the full extent of disease in the mucous membrane, whether confined exclusively to the neck, body, or fundus, and it is but a question of time before the whole canal may become involved. We learn, however, from experience, that recovery is more rapid when the disease exists near the os, than when situated in the upper portion of the canal. The most common point of origin has yet to be determined; but my impression is that, in females who have not borne children, the disease generally has a beginning in the cervix, while the seat of the placenta is the point with others, and from which the disease extends toward the cervix, or in the opposite direction. The uterine discharge is more profuse when from the cervical canal, clearer and of a more gleety character from the neighborhood of the internal os, and diminishes in quantity and consistency on approaching the fundus. The selection of remedies varies somewhat with the seat of disease, but my present knowledge is not sufficient to be explicit. The truth is, that our practice here becomes somewhat empirical, for we can neither map out the boundary nor direct with accuracy our applications to the diseased surface alone: so that a remedy, which was apparently most efficacious in a previous case, may prove inert under a like condition, so far as we yet possess the knowledge of appreciating a difference. We know, however, that remedies of a more stimulating character, with astringents as adjuvants, are useful as applications to disease about the cervix, and alteratives for the upper portion of the canal. In our selection we must use those calculated to do the least harm to the mucous membrane which may still be in a normal condition. Rare indeed is the necessity for applying, within the uterine canal, caustics, the cautery, or the strong mineral acids. It is true that these remedies act promptly, so far as to heal an erosion and to check all uterine discharge. But we cannot restore the patient to health by so far changing the character of the mucous membrane as to leave it a mere cicatricial surface. Our ultimate success will be directly in proportion to the condition in which we leave this membrane, for we will need its healthy action in the after-treatment of the case. That individual cases escape with but little damage is only due to protection afforded by the secretions; yet the practice, as a rule, is disastrous enough to deprecate their use. We have no remedy which will act with more promptness than the nitrate of silver, when applied to the mucous membrane of the cervix, yet it has done more damage than any other. From being in common use it is the more dangerous, for its repeated action will ultimately destroy the mucous follicles, harden the tissues, and close the os as certainly as the application of the actual cautery. The evil effects of its application on the mucous membrane of other parts of the body are so well recognized, that its continued use for the uterine canal is remarkable.

I have found most useful for applications to the cervix, Squibb's impure carbolic acid, or creosote-tar. Its action is very different from that of the pure carbolic acid; it exerts a local anæsthetic effect, and is not a caustic. This may be applied at intervals of ten days, with the intermediate use of tannin and glycerine, or the pinus canadensis. It is advisable to add to the last pint of the hot-water vaginal injection a certain quantity of chlorate of potash, chloride of sodium, borax, carbonate of soda, or alum, as may seem indicated. When the disease is above the cervix, and the patient is in a fit condition for their use, sponge-tents may be employed for their alterative effect.

They may be used, of a small size, merely to set up a new action by their presence, and by moderate pressure may be of benefit in relieving congestion, on remaining long enough to excite a free discharge; or of a larger size, with the view of dilating the canal fully and exciting the uterus to contraction, in cases of hypertrophy. After removing a large tent, and while the canal is still dilated, it is beneficial to wash out the cavity with a continued but gentle stream of hot water from the nozzle of a Davidson syringe introduced well up to the fundus. Before the uterus has contracted, it is well to make a thorough application of the strong tincture of iodine throughout the canal. I sometimes alternate with the use of iodine by introducing within the canal either the dry persulphate of iron, the oxide of zinc, or powdered alum. This is done by means of a roll of moist cotton twisted around the applicator and well covered with the powder. After wrapping the cotton firmly around the applicator and giving it the proper curve, the twist is reversed with the fingers so as to loosen the cotton sufficiently, so that when introduced to the fundus it will remain behind on withdrawing the instrument. The presence of the cotton can produce no irritation, as it occupies so little space, and it will be thrown out from the uterus in a few hours if a portion is left projecting from the os. The profuse white-of-egg-like discharge does not seem to be a product so much of congestion of the mucous membrane as from disease of individual Nabothian glands, which project and can be felt with the probe. In addition to the treatment given, I frequently remove these little projecting bodies by means of scissors when within reach. Disease at the fundus is a more serious condition to overcome, and one but little influenced by any special application. The lining membrane of the upper portion of the canal is so different in character, that I doubt if disease is ever confined exclusively to it, but at the same time the uterine tissues beneath are always more or less involved. The frequent use of iodine, with the view of lessening the size of the whole organ, must be our main reliance, with more care for improving the general system than where the disease seems to be confined to the mucous membrane itself.

I feel that I cannot, in justice to the subject or myself, enter more into detail. The views of treatment which I have already advanced are equally applicable in some respects to any form of uterine disease. But, from the fact that displacements and versions cannot be treated by mechanical or surgical means alone, the propriety of entering in addition on a subject of such scope might be questioned. It is but just that I should state that my views have been based to a great extent on a hospital practice, yet I hope they may prove no less useful as an experience in the treatment of an exaggerated form of disease which must always be opprobrious in private practice. Imperfectly as these views have been given, they have been gathered from a most extended field of observation. In consequence of a continuous service of some twenty years in the Woman's Hospital, when it was so long the only institution for the treatment of these diseases in the country, I have been favored with advantages which could scarcely occur again; while, in addition, from holding the position of surgeon-in-chief to the institution during so great a portion of the time since its foundation, I have had a rare opportunity for observing the practice of others and for correcting my own mistakes. A record has been preserved of every case which has been under treatment in the Woman's Hospital, and in my own practice, so that I have been able to keep for years a large number of former patients under observation. By the aid of these records, and by personal observation on the return of the patients at stated intervals, I have been able from time to time to fairly test the value of different modes of treatment.

Art. III.—*Peristaltic Arterial Action. Second Article.* By John J. Mason, M. D., New York, Visiting Physician to the Epileptic and Paralytic Hospital on Blackwell's Island, etc.

In December last I published, in the New York Medical Journal, some experimental and theoretical objections to the views entertained by Légros and Onimus, of Paris, concerning a function which they suppose to be performed by the muscular walls of the arterioles. Their theory is, that the arterial blood-waves dilate, in succession, the portions of the arterial walls with which they come in contact; that these portions or sections contract immediately behind each wave, and thus assist the flow of blood toward the capillaries; that the successive shocks imparted by the waves, as they pass, are the exciting causes of these contractions.[1]

I now offer a reply to one in our own country, who, it seems, has become an advocate of this theory, and not only differs with the writer in opinion, but also makes an attempt to prove that his experiments are unphysiological.

In the first place, as to the objection relating to an electrical point, he errs, in assuming that I regard it as an "unimportant" one. Nothing of the kind was implied in my first paper. At all events, it remains still unattacked, and its importance will be more fully shown in a subsequent article.

Before proceeding further, let it be understood clearly that, in common with everybody, we admit vermicular intestinal action to be a fact. We acknowledge that something in a rabbit's ears is sometimes seen which looks like peristaltic action of the arteries, and we believe that the retinal arteries

[1] This is a correct statement of the theory as given by its originator, Légros, in his "Thèse d'Agrégation," Paris, 1873, p. 83.

often act in much the same way when embolism occurs in a single branch. We insist, however, that all such examples as these ought, at the outset, to be excluded from the question under consideration. They are entirely irrelevant facts, have no bearing whatever upon the discussion of the theory as above given, and tend only to confuse. Let us, then, hold fast to the main points at issue, and not think we see a parallel between vermicular action of tubes, like the lacteals upon their inert contents, and that supposed to assist the flow of a wave-like current of blood coming from an organ like the heart.

In my experiments, from which, as it is claimed, no physiological arguments can be drawn, I found that in rabbits, when a stream of milk was forced through the circulatory system of the lower part of the body, the amount of liquid returning by the abdominal vein varied. When the injection was made intermittently, so as to produce waves (as in nature), something in the vessels of the animal offered an obstacle to the flow—an obstacle not offered to a stream coming from continuous pressure. This was determined by noting the ratios between continuous and intermittent streams before and after attaching the canulæ in the vessels of the animal. The details of procedure were all given, and the results (in time) carefully recorded. It was claimed that we ought to have obtained opposite results, were the "peristaltic-action" theory correct. The criticism on these experiments reads as follows: "Now this something" (in the vessels of the animal, which alters the ratio) "is only the greater difficulty with which water (?) passes through the capillaries than it does through the canula." The author of this criticism regards these vessels as standing in the place of a smaller canula, and claims that by experimenting with elastic tubing, terminating in canulæ of different sizes, he has been able to explain my results.

Now, he is simply mistaken as to the facts.

The smaller the canula, the more liquid passes through it in the same time, when passed intermittently, and compared with an amount passing through a larger canula from the same source and in the same manner.

I have experimented with various lengths of tubing and sizes of canulæ, using always for motor power the irrigateur syringe of Dr. Eguisier, and timing by a metronome the intervals required to fill a vessel of known capacity—ten fluid ounces. These experiments have been conducted with the greatest care, and several times in the presence of other medical gentlemen.

Experiment No. 1.—Canula, 2 m.m. in calibre. Tube caoutchouc, 2 feet long—same calibre as canula. $\dfrac{\text{Continuous } 30 \text{ beats.}}{\text{Intermittent } 44 \text{ beats.}}$

Experiment No. 2.—Canula, 1 m.m. in calibre. Tube caoutchouc, 2 feet long—same calibre as in No. 1. $\dfrac{\text{Continuous } 66 \text{ beats.}}{\text{Intermittent } 68 \text{ beats.}}$

The proportion is 30 : 44 : : 66 : : 96 + i. e., we should expect to wait for 96 beats, while, in reality, the vessel was filled in 68 beats.

While the use of the metronome is evidently more conducive to accuracy than are measurements of quantity, since the latter method has been adopted by our critic, it was also tried, with the following result:

Experiment No. 3.—With same apparatus, water measured after flowing ten seconds. Large canula (2 m. m.). $\dfrac{\text{Continuous } 8 \text{ ounces.}}{\text{Intermittent } 6.5 \text{ ounces.}}$ Small canula (1 m.m.). $\dfrac{\text{Continuous } 5 \text{ ounces.}}{\text{Intermittent } 5 \text{ ounces.}}$

These results are invariable; they depend upon well-known hydrostatic laws, and furnish additional (though not unexpected) evidence in favor of the position which I have taken.

My next objection was, that peristaltic contractions of an artery, in order to accelerate the flow of blood, must occur synchronously with the beats of the heart. The necessity of such a supposition was, as we see, fully recognized by Légros, for otherwise his theory could not even have been stated in an intelligible form. Now, such rapid contractions of unstriped muscular fibre have no parallel in the organism. "Les fibres lises ont une action moins prompte." To infer the existence of such contractions is purely hypothetical.

Our American opponent goes farther than Légros, and claims that these contractions need not be synchronous with the heart; and, to support his view, he performs some experiments producing intermissions with the ball of a Davidson's syringe, allowing a stream of water to pass through it. "I found," he says, "that a continuous stream would give, when aided by contractions of the ball, from four to thirty per cent. more water in the same time than when unaided." We reply, Imitate Nature. Remove the valves from the syringe, and the results will be exactly reversed. The arteries have no valves. With the valves the flow is accelerated; without them it is retarded.

If the experiments with different-sized canulæ were made with a Davidson's syringe, were the valves in or out? With this instrument connected with the tubing I obtained—

1. Valves in, $\begin{matrix}\text{Continuous} \\ \text{Intermittent}\end{matrix} \frac{96 \text{ beats.}}{80 \text{ beats.}}$ 2. Valves out, $\begin{matrix}\text{Continuous} \\ \text{Intermittent}\end{matrix} \frac{80 \text{ beats.}}{118 \text{ beats.}}$

Art. IV.—*The Straight Splint in Elbow-Joint Injuries.*

By T. Blanch Smith, M. D., Nyack, N. Y.

While reading the comments of Dr. Bissell upon his "Case of Compound Fracture of Radius and Ulna, with Dislocation of the Elbow and Wrist-Joints," published in the January number of the Journal, I was reminded of the history of a case[1] that fell under my observation, in which the straight splint, suggested by Dr. Bissell as an experimental appliance, was shown to be a trustworthy and effective dressing in certain severe injuries of the elbow-joint and lower extremities of the humerus.

November 15, 1871, was called in consultation to see Eldridge Van O., ten years old, who, a week previously, had sustained a compound fracture of the lower end of the humerus, by being thrown violently to the ground from a horse in rapid motion.

Immediately after the accident a fragment of bone was found protruding through the soft parts covering the internal condyle. After a partial replacement of this piece of bone there was free hæmorrhage from the wound, and a large thrombus formed rapidly at the flexure of the elbow-joint.

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[1] Report on Surgery—Rockland Medical Society, February, 1872.

At the time of my visit, the limb was highly discolored and sensitive, the tumefaction much diminished, and the wound nearly healed. A slight examination revealed the fact that the projecting point of the upper fragment of the humerus was ready to again puncture the integument, this time to cause a wound just posterior to the head of the radius.

After thorough etherization of the patient, a deliberate examination of the injured parts satisfied the attending physician and myself that there was, first, a very oblique fracture of the lower third of the humerus, the line of fracture running downward and forward from a point about one inch above the upper border of the olecranon fossa, to one immediately above the coronoid depression; second, a fissure between the two condyles, clearly demonstrated by bony crepitus and mobility of the lateral fragments.

While the patient was still etherized, nice coaptation of the broken bone was easily accomplished by steady extension upon the forearm, and the angular splint was at once applied. Before the completion of the dressing it became evident that the result of it would be an unsatisfactory approximation of the fragments, and not the coaptation deemed requisite.

A like result following a second careful trial of the angular splint, it was decided to resort to some other expedient; and in the absence of gutta-percha and plaster, and having observed the facility with which the fractured parts were brought into apposition by extension in a straight line from the wrist to the shoulder, it was concluded to try a long, straight, well-padded splint, which should extend from the upper third of the arm to the thenar eminence.

Without etherization, gentle extension of the whole limb was made from the hand, and the splint was applied to the anterior aspect of the arm and forearm, the hand in the supine position. Care was taken to place a pad about an inch above the sharp end of the upper fragment, and another close above the olecranon process.

In this apparatus the parts were maintained in apposition, and the limb was laid beside the trunk, upon a thin cushion, in a position of moderate abduction. The parents were instructed to alter the axillary angle whenever certain positions should become decidedly irksome.

On the fifth day of the dressing, slight passive motion of the elbow-joint was resorted to, and after that date the limb was subjected to the same manipulations every day, or every other day, as was practicable, until the twenty-sixth day after the accident, when, the fragments seeming to be united with sufficient firmness to prevent easy displacement, a graduated angular splint was applied. Free passive motion having been made at this time, the parents were ordered to continue it daily, in the interval between the visits of the regular attendant, and to fix the elbow at a different angle at each dressing.

Judging from my observations and the statements of the daily attendants, the inconveniences and discomforts consequent upon the use of the straight splint in this instance were not appreciably in excess of what would have been anticipated in the case of a lad suffering from such severe injuries, when subjected to the restraints imposed by the most generally-approved appliances.

The result was very satisfactory, as there remained only moderate deformity, from slight overlapping by the upper fragment, and in nine weeks from the accident the hand could be put to the mouth. Extension and flexion of the forearm were nearly natural, and the limb soon became as strong and useful as it had been before the receipt of the injury.

Hamilton is the only one of those authors to whose treatises I have had access—including Syme, Erichsen, Holmes, Gross, Ashhurst, Pirrie, Druitt, and Bryant—who countenances the use of a long, straight splint in any form of injury of the upper extremity, with the exception of fracture of the olecranon process.

Although he states that he has used it only in cases of *delayed union* of the shaft of the humerus, I well remember how greatly my anxiety and mistrust in this case were relieved, after returning home from my first visit, by reading his quite ample essay on this subject. After speaking of the "serious objections" and inconveniences which must always, probably, prevent its being adopted as the usual plan of treatment for fractured arms," he says: "But I shall not be surprised to learn that experience will prove these objections to have less weight than we are disposed to give them."[1]

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[1] "Treatise on Fractures and Dislocations," third edition, p. 240.

From previous experience I am convinced that it would be illogical to ascribe all the good results in this case to the use of the apparatus here noticed; for, without the early and persistent resort to passive motion, the employment of the straight splint might result in a degree of deformity and inutility of the limb greatly in excess of that which could follow the omission of that essential feature of the treatment with the use of the angular splints.

Upon the subject of passive motion most surgical text-books give unskillful advice, recommending a delay of three weeks, or longer, from the date of the accident, before beginning the movements. Such postponement of this valuable adjuvant, in the successful management of joint-injuries, will, I am satisfied, be strongly condemned by those who have had the best results through a rejection of the advice, and have begun motion immediately upon the subsidence of active inflammatory processes.

In children the best results will ordinarily be obtained by beginning the movements on or about the fifth day; in adults three or four days later. The use of chloroform, to the stage of thorough intoxication, should not be omitted, especially in children, when passive motion is attempted at an early period, for without such moderate narcotism the suffering is acute, and the practitioner is liable to restrict the movements to a limit which will not give the best results.

It is not improbable, considering the anatomical relations of the lower end of the humerus, that in the long, straight splint we may find an appliance which will maintain requisite coaptation in cases of oblique fracture of this portion of the bone, with much overlapping of the fragments, whether involving the joint or not, in which, as Ashhurst observes,[1] "Great difficulty is sometimes experienced in maintaining reduction, from the action of the powerful muscles at the back of the arm."

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[1] "The Principles and Practice of Surgery," 1871, p. 252.

Clinical Records from Private and Hospital Practice.

I.—*Two Cases of Thrombosis of the Arteries of the Lower Extremities; Recovery, one with and one without Amputation.* By Frederic D. Lente, M. D., Cold Spring, N. Y.

These two cases occurred almost simultaneously in my practice some years ago, and intrinsically possess very considerable interest; but, in connection with articles which have been since written in Europe and in this country, more especially a very elaborate paper by John A. Lidell, M. D., in the January (1873) number of the *American Journal of Medical Science*, and one by S. B. Ward, M. D., in the March number of this Journal, they possess more practical importance, and it is this which induces me to offer them to the profession after such a lapse of time. As pathological phenomena simply, they are unfortunately not rare. We are meeting them at every turn, and when least expected, converting a hopeful convalescence, after severe and protracted illness, into a second struggle with a more deadly enemy. I propose to do but little more at present than to offer a few cases as a contribution to the history of this important affection. These, with histories already written, and the clinical facts bearing upon it, which will, no doubt, be given to the public from time to time, will lead to its more thorough understanding, and more successful management.

There is a slight confusion of nomenclature among those who have handled the subject. The term *embolism* is generally applied to that condition where a mass is detached from the heart, and carried to some artery where it is arrested; and *thrombosis* to the spontaneous coagulation of blood in an artery or vein; whereas, Dr. Lidell calls that condition in which an embolus is the original cause of the difficulty, "secondary" thrombosis, considering that, in all cases, the serious results are due mainly to thrombosis. He is probably correct, for it would seldom happen that an irregular mass, washed from the heart, would of itself accurately occlude a vessel; a thrombosis must then complete the plug; and if the former did occur, the serious results, pain, great tumefaction, partial paralysis, gangrene, would not occur unless something should be superadded to the total occlusion for an inch or more. For, as Dr. Ward puts it, "Why do not these consequences more frequently follow the ligature of large arteries?" Here the clot extends only to the nearest collateral branch; whereas, in the disease now under discussion, it occludes collateral branches as well, and perhaps from causes referred to by him. One of the most interesting phenomena connected with this disease is the fact of the complete absence of pulsation in large vessels for days, and a more or less complete reëstablishment of the circulation subsequently, and not depending in any considerable degree on increased cardiac action. It is known that the obstructing plug is of considerable length, and if we suppose that the current of blood does not at all pass between it and the occluded vessel, its solution would seem physically impossible, whether it be a semi-organized mass from the valves of the heart, or a comparatively soft thrombosis formed in the vessel. It seems probable, therefore, that, in these cases, there is not complete occlusion, and this may interfere with the establishment of the collateral circulation, since the *pressure* on the secondary branches would be much lessened by a direct current, however slight it might be. This should induce us to attempt, by every available means, to increase the power of the heart, especially by the use of that prince of heart-tonics, digitalis, as recommended in conjunction with alcohol by Prof. Ward. All the older writers on spontaneous gangrene, and on thrombosis, which may be considered identical as far as *treatment* is concerned, if not pathology, rely greatly on bloodletting. But they apply it to plethoric cases mainly, where the pulse is full and bounding.

The following histories should admonish us to caution our convalescents from prostrating or debilitating diseases, and those attended by exhausting discharges, or with a tendency to hyperinosis of the blood, and in certain puerperal cases, to be very careful as to even moderate exertion, especially with regard to assuming the erect position too soon or too suddenly.

Case I.—The medical public first became acquainted with this patient through an article of mine in the December (1867) number of this JOURNAL; she there appears as the subject of an experiment for the treatment of cancer of the mammary gland by acetic-acid injections, one of the numerous cancer-cures now obsolete. It was subsequently extirpated, and has never reappeared.

The first part of the history of the case I give in the words of Dr. B. A. Segur, now on the sanitary staff of the city of Brooklyn, who was conducting my business during temporary absence for recreation, and who was called in consultation with Dr. E. J. Marsh, then of the army, now of Paterson, N. J. The patient, a lady sixty-one years of age, previously in good health, and unmarried, was suffering severely with pain, which was almost continuous. The trouble had commenced suddenly about four days before. An attack of syncope was followed immediately by coldness and a "numb sensation" in the right lower extremity. The surface was a purple color.[1] After two or three days, all this subsided in the right extremity, and the left became the seat of a diffused, continuous pain, with extreme sensitiveness to the touch, coldness below the knee, and moderate enlargement of the cutaneous veins. At intervals from two to five minutes, momentary paroxysms of most severe pain occurred in this limb, beginning at the foot and shooting up the thigh. The pains were unbearable, causing the patient to make outcries. There was little if any enlargement of the limb, the tissues soft. No pulsation could be felt in the popliteal space, or even the posterior tibial artery of either limb. The pulsation of the femoral arteries was with difficulty felt, apparently of the volume of the temporal. Various preparations of opium had failed to give any relief to the pain, but constantly caused delirium. It was agreed to try codeia, to apply an anodyne liniment, and wrap the limb with flannel covered with oiled-silk.

May 11*th*.—Limb still cold below the knee; no enlargement; no discoloration. The toes appear shrunken, their integument like parchment. Common sensation remains. Suffers the same continuous pain in this limb, also in the right, the same exquisite sensibility to the touch, and the paroxysmal exacerbations. There is a special tenderness on pressure over the calf of the left leg. Neither the codeia nor the liniment has afforded any relief. It was agreed to try quinine in ten-grain doses, and whiskey in place of opiates.

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[1] It may be well to add to the doctor's account, that the origin of the syncope was an attack of obstinate obstruction of the bowels, for which cathartics were administered by Dr. Marsh in consultation with Dr. McParlin, of the army, and that, after a dose of senna, a profuse catharsis followed, and, while walking back to bed after an evacuation, the syncope occurred.

May 13*th.*—No particular change; the stimulant causes violent excitement, and is discontinued. The quinine has acted well, giving the patient snatches of sleep, and as much as an hour at a time.

May 20*th.*—Paroxysms are less frequent, less severe, and of shorter duration. The cutaneous veins less prominent, and the capillary circulation more apparent, the toes less shrunken, and the skin has a natural appearance.

May 27*th.*—The quinine still exercises a marked influence over the paroxysms, and patient gets an hour or two of sleep occasionally. The limb looks quite natural and is warm. The femoral pulsations (both sides) are stronger, but still found with difficulty. There is a spot of discoloration, apparently superficial, over the heel, also the metacarpal bone of great-toe, the size of a quarter of a dollar. Pulse a little increased in frequency; tongue shining, anorexia almost complete, a great deal of restlessness, anxiety; urine abundant; bowels slow.

I relieved Dr. Segur on the 18th, in consultation with him and with Dr. Marsh, and subsequently with Dr. Marsh after the 27th.

There was not much change in the symptoms until June 1st, when the circulation in the left foot and leg was noticed to be much improved, the skin being warmer, and having a more natural appearance. But *no pulsation could be felt in the iliac or femoral arteries.* Neither Dr. Marsh nor I have been able to detect any pulsation in these vessels at any time since the occurrence of the accident. The pains were less severe. The patient's general condition was, however, not so good, less appetite, feebler, pulse more frequent and intermitting.

June 5th.—General condition improved. Pulse regular; sensitiveness of surface diminished; paroxysms of pain less frequent. No medicine lately except an occasional dose of Hoffmann's anodyne.

June 8th.—Much better. Pulse 100; stronger. The leg (left) has been enveloped in cotton, except the great-toe, where there is a slight purple discoloration, also under a part of the nail. There has been no paralysis of sensation or motion except the extensor of both great-toes.

June 25th.—Nothing worthy of note since last date, except once or twice she has had an attack of vomiting, lasting eighteen or twenty-four hours. The severe paroxysms of pain sometimes last two or three days. General condition improved. Pulse quite good. Limbs present a natural appearance, except that the integument is rather pale. There is no pulsation to be felt in any artery below the bifurcation of the aorta. Various anodynes and numerous expedients have been resorted to with a view to alleviate the attacks of pain, but with only partial and temporary success. The pain seems always to originate at the gangrenous spot at the end of the great-toe.

September 21st.—For some weeks past all pain in the leg has ceased, and her general condition has been good. She has been prevented from bearing any weight on her feet by a small but deep ulcer which formed at the gangrenous spot on the bottom of the heel. This healed about a fortnight ago, and she has been trying crutches for some days past, but complains of great weakness about her hips.

On the 20th, after attempting to walk into the next room, she suddenly felt a sharp pain in the right groin, and required assistance to get to bed. I was summoned at once, but could not see her until the 21st, Dr. McParlin, of the army, seeing her meantime, and taking charge of the case. He and Dr. Wiggin, of the army, were uncertain as to the diagnosis, in view of the peculiar condition of the circulation, and other circumstances. In consultation with these gentlemen, I diagnosed femoral hernia. Taxis with the aid of ether was unsuccessful, but there were no urgent symptoms until the 23d, when we operated.

February 12, 1869.—Have not seen the patient for more than two months. Her general health is good. Wound has healed. Distinct, though feeble, pulsation can be felt in the right external iliac artery, and in the femoral as far as the profunda, but none in the left. There is no enlargement of the *epigastric* arteries. There is considerable hyperæsthesia of the integument of the anterior aspect of the right leg. The paralysis of the *extensor pollicis* muscles, especially the left, continues but is not now complete. Patient has been afraid to stand on her feet for any length of time, for fear of meeting with another accident; but she is able to walk a little, with some assistance.

March, 1874.—For the past year patient has enjoyed good health, and walks very well. Am not able to say what is the condition of the arteries at this date.

Case II.—I commence the history of this case, in order that it may not be tediously extended, on September 2, 1868, when the patient's age was thirty-five; but it dates back several years before, and presents, like the preceding case, many interesting features, and a somewhat remarkable series of pathological phenomena, some of them intimately, all of them, perhaps, in a measure, connected with the disease which we are considering at the present time. Among her troubles, she has passed through puerperal mania of a rather violent character, entirely cured without resort to a hospital; long years of uterine disease, dysmenorrhea and menorrhagia, endometritis etc., relieved, but not cured. My note on September 2d is: "During the past spring and summer has been unusually well for her, has suffered less pain, and has had no menorrhagia. But, for two months, the hæmorrhagic character of her catamenia has again declared itself. Has now been flooding for two weeks, and is much weakened thereby. The uterus is much enlarged, and there is a strong probability of polypus."

15*th*.—Various measures have been resorted to in order to arrest the hæmorrhage; it seems to be controlled at present by cold alum and iron-alum sitz-baths. But now she has her former pains, which attended her different phases of uterine disease, in the iliac fossa and down the left thigh. A thorough examination with reference to the existence of *polypus* has been deferred on account of her great debility.

25*th.*—The pains have increased very much, and patient has suffered a great deal from nausea and vomiting, so much so that it has been necessary to nourish her by enemata. The pain now takes the course of the sciatic nerve, extending down the posterior aspect of thigh and leg to dorsum of foot. On vaginal examination, the cervix uteri is ascertained to be thinned out almost to complete obliteration, and a large, smooth, elastic polypus presenting; the finger can be swept around the tumor to some distance within the uterus. Directed injections *per rectum* of Squibb's fluid extract of ergot, in order to induce the uterus to throw off the mass sufficiently to allow of reaching its attachment.

30*th.*—The pain has increased, and has now become diffused over the limb, but more severe in the foot and below the knee, which parts are somewhat swollen and indurated, but not œdematous. The foot is also inclined to coldness. The skin is very sensitive, and any pressure upon it, or movement of the limb, gives severe pain. The nausea has ceased, and she is able to take stimulants and nourishment by the mouth. On examination into the condition of the vessels supplying this extremity, it is found that there is no pulsation in the external iliac or femoral arteries. There is no tumefaction in the groin, and no pain on pressure along the course of the femoral vein. Pulse still very feeble and frequent (120).

October 7*th.*—The foot and ankle are perfectly cold and white, except some purplish spots on posterior aspect of latter. Patient now sleeps better, under the influence of hypodermic injections of morphine.

10*th.*—The swelling has extended as far as the groin, and the ecchymotic discoloration has spread all over the foot, and to a few inches above the ankle, where there is a tolerably well-defined line of demarcation.

13*th.*—The discoloration has been assuming a reddish line from above downward, and, to-day, under the influence of applications of alcohol and saltpetre, recommended by some friend, and used without my knowledge, has lost its livid aspect altogether, but large blebs have formed on the sides and sole of the foot. The thigh is now greatly swollen and œdematous, but not painful. Pulse 125.

18*th*.—The foot is now warmer than it was some days since; but the blebs are extending, and the serum becoming turbid. She now complains of pain in the right foot and calf of leg.

20*th*.—Pain now severe in right foot and leg, and the former somewhat œdematous. Pulsation in iliac and femoral artery good.

November 2*d*.—The sloughs are separating, and *pulsation is returning* in the femoral artery. Tumefaction of the whole limb (left) also much less. There is now but little pain in right limb, but some œdema of foot, and the pulsation of tibials not so good. Pulse 105. General condition about the same. The swelling of left limb has almost entirely disappeared. The pulsation of the left femoral is now quite strong, while that of the right side is weaker than it was, and the limb is much swollen and œdematous, without induration. There is considerable tenderness on pressure along the course of the femoral vessels, and the temperature of the foot is less. There are enormous bed-sores on the buttocks and sacrum, which have just been discovered, although the attendants have been repeatedly cautioned to look out for them. It has, however, been impossible for them to raise her unless she had been under an anæsthetic. A grain of morphia night and morning has kept her tolerably free from pain except when moved. She is now placed on a water-bed.

17*th*.—The tenderness along the course of the vessels on right side has disappeared, but the swelling remains the same. The least attempt on the part of the patient or of any one to move this limb induces most severe pain; and there has been, for some days, a persistent pain, increased by pressure, about the heel. Two and sometimes three grains of morphia required in twenty-four hours.

December 1*st*.—Patient has lately been improving in every way. Pulse 88, and of fair strength. As regards the uterine difficulty, an examination, on November 17th, revealed the fact that the tumor has receded, and the finger, passed some distance into the cervical canal, failed to encounter it. To-day, the os is found to be so contracted that the finger is with difficulty passed into it, and causes pain.

January 19, 1869.—About the same. To-day amputated the left leg above the ankle, assisted by Dr. Murdock, and by Drs. McParlin and Marsh, of the army. Uterus in same condition as at last examination. No vaginal discharge of any description for some time past.

February 14*th.*—Nothing worthy of particular notice has occurred since the operation. For the last fortnight has had less pain, requiring no anodyne. Until the last few days the stump showed no disposition whatever to heal; the flaps white and bloodless, and falling together like dead tissue. But now, under the stimulus of a solution of carbolic acid injected between them daily, they are closing in to the face of the stump, and granulations are feebly shooting up. Œdema and tumefaction of right limb increasing, and extending above the hip. Pulsation of femoral, to its passage under the sartorius, very good, but ceases abruptly at this point, and here there is also considerably more pain on pressure than anywhere else. At all other points, on the inside of the limb, the pain on pressure is decidedly less than on the outside. The temperature of limb good.

March 6*th.*—Since last date the toes became quite cold and slightly livid, but under the influence of warm applications the temperature was restored in twenty-four hours and has remained normal since. Catamenia returned two days ago; no hæmorrhage.

September 15*th.*—Improving regularly in strength and spirits. Can work herself down to the foot of the bed (has been removed from the water-bed) and sit up. Swelling and induration of cellular tissue of both limbs very great. Bandaging, frictions, etc., perseveringly applied, have failed to effect any thing. Knee-joints very rigid. Catamenia perfectly regular as to time, but generally profuse, except the last two periods. On examination, in consultation with Dr. John G. Perry, of New York, it is ascertained that the body of the tumor is in the vagina, and that the pedicle, which is quite thick, passes up apparently to the fundus. It is about the size of a hen's-egg. As there is no pressing necessity for an operation, I conclude to defer it until the adhesions of the knee-joints can be broken up, thus giving patient more use of her limbs; supposing that, in the mean time, the tumor will descend lower, and the pedicle become smaller.

October 20*th.*—It has been necessary to defer attacking the knee-joints until this date. Etherized patient and bent the joints to as great an extent as the tumefaction and induration of the limbs would admit. The tumor is not so low in the vagina as it was.

December 16*th.*—Since the operation the tumefaction and induration have notably diminished. Within the past month, on two occasions, when she has attempted to rise and help herself, she was attacked by severe bearing-down pain, only relieved by large anodynes. Supposed to be caused by the dragging of the polypus. To-day visited her with Dr. Murdock with the design of removing it; but, on examination, we found that it had almost entirely receded within the uterus, the cervix embracing its lower extremity quite firmly. Under the circumstances we considered it prudent to defer operating, and try the effect of *ergot.* Ordered twenty drops of Squibb's fluid extract q. 2. h.

April 25, 1870.—The ergot had no effect on the tumor. About four weeks ago, the bulk of it had again descended into the vagina. But, an attack of diphtheria setting in, an operation was deferred until the 27th, on which day, on making a preliminary examination, the tumor was found to have again receded entirely within the os.

May 31*st.*—Dr. George T. Elliot, of New York, saw the case with me to-day. We find the polypus in the vagina, but, as the pedicle is thick and the attachment high, Dr. Elliot advises delay.

July 1*st.*—Polypus has receded again since last date, and has again appeared in the vagina.

10*th.*—Polypus entirely within the uterus, and os uteri dilated only about three-quarters of an inch in diameter. It evidently passes into the vagina just previous to the appearance of the catamenia, and recedes immediately after. Patient always feels oppression and slight nausea on its retreat into the uterus.

July 28th.—To-day embraced the pedicle of the polypus with the chain of an *écraseur*, but, when partially severed, the chain gave way.

August 28th.—Attempted removal with wire *écraseur;* wire broke as usual, when partially severed, and the polypus was accordingly seized with a vulsellum, and twisted off. It was about the size of a hen's-egg.

April, 1874.—Patient's health is good.

Notes of Hospital Practice.

BELLEVUE HOSPITAL, NEW YORK.

MEDICAL DIVISION.

Action of Nitrite of Amyl in restoring temporarily a Moribund Patient.—I. H., aged thirty-two years, laborer, entered the service of Dr. E. G. Janeway at Bellevue Hospital, on May 27, 1874. The history obtained was to the effect that, during the summer of 1872, he first noticed his eyelids to be puffy, and his feet swollen. He continued to work, however, until five months before admission, when increasing debility, complicated with dyspnœa, palpitation, and loss of appetite, developed. When admitted, the patient was anæmic, very pale, and stated that his urine had been suppressed for forty-eight hours. His feet and legs were very œdematous, and the rest of his body to a slighter extent. There was increased area of cardiac dullness, with a double murmur over heart anteriorly and posteriorly, with the qualities of a friction-sound of cardiac rhythm. There were also evidences of slight œdema of the lungs. The catheter removed only a few drops of urine from the bladder. Dry cups were applied over the lungs and kidneys, and half an ounce of infusion of digitalis, with half a drachm of acetate of potassa, given every four hours. The next morning the dyspnœa was improved, and about four ounces of highly-albuminous urine passed. About noon, Dr. Janeway saw the patient for the first time. He was then unconscious. Pupils dilated. No response on touching the conjunctiva. Complete loss of pulse at the wrist, and breathing of a spasmodic character, such as occurs a few minutes before death. Some nitrite of amyl was obtained, and inhalations of five drops, cautiously increased to twenty-five drops, commenced. After the use of twenty drops, the pupils began to contract, and winking resulted from touching the conjunctiva. The pulse now began to be felt at the wrist. With the use of the last five drops he returned to consciousness, and the pulse at the wrist became full. He was now able to speak, and asked how long he had been faint, and whether or not he would pull through. The inhalations were now suspended, and half an ounce of brandy administered. A man was stationed at the bedside to notify the house-physician of the least approach of dangerous symptoms. In about fifteen minutes another attack occurred, and by the time the physician approached him he was dead.

There can be no doubt that in this case the amyl produced the temporary restoration from all but death, and the subsequent death in so short a time showed the gravity of the case.

This temporary restoration might be at times of great value, and, in a case where the lesions were not so serious, might be prolonged into cure and permanent recovery.

Dr. Janeway has not read of any case in which such a near approach of death was warded off, and is of the opinion that, as a rule, it would not be judicious to give such large doses; but, from the fact that a certain amount remained on the towel, it is difficult to say how much in reality the patient inhaled. He does not believe that the nitrite would prove equally serviceable in cerebral hyperæmia producing unconsciousness, the case under observation being one of cerebral anæmia, with failure of the heart's action from pericarditis.

Autopsy.—Lungs œdematous, with slight hydrothorax. Heart normal in size. Pericardium coated with fibrinous exudation of considerable amount. The sac contained a small quantity of serum. A microscopical examination of the tissue of the heart showed evidences of fatty degeneration in the portions beneath the pericardium. Liver, fatty. Kidneys, of the large, white variety. Evidences of fatty degeneration, with increase of connective tissue. Cortical part of the kidneys anæmic. On one side there was a hydrocele.

Pyo-Nephrosis.—The case of pyo-nephrosis reported in the JOURNAL for the month of June, died fifty-two hours after the operation, with evidences of slight pneumonia. The abdominal tumor measured nine and a half inches in length, by six in width and three in depth, and was made up of kidney-tissue. The ureter was dilated sufficiently to introduce the index-finger, and was occluded about an inch above its entrance into the bladder.

SURGICAL DIVISION.

Amputation at Knee-Joint.—The patient had been an actor at Barnum's Hippodrome, and during the performance received a compound comminuted fracture of the tibia and fibula at the lower third. For a week after the accident he had been under treatment outside, and at the end of that time entered the hospital. On admission, the toes and foot were found to be gangrenous, and it was decided to amputate. Esmarch's bandage was applied, commencing immediately above the injury, and the leg removed at the knee-joint by Dr. Harlan, of the house-staff. The operation consisted in making the usual cutaneous flaps, the patella not being removed. The edges were brought together by means of silver sutures, and the stump itself involved in oakum. At present, seven days after the operation, the case is doing well.

Dislocations.—Two cases of sub-glenoid dislocation of the humerus reduced by manipulation have resulted in atrophy of the deltoid muscle. It seems strange that this should have taken place, when no special force was requisite in either case.

Splints.—Recently a new form of wire splint has been introduced, which, in many cases, proves more satisfactory than any other species of support. It consists of a wire net-work case, having something of the contour of the limb which it is intended to receive. It possesses many advantages over the fracture-box, being lighter, allowing the use of evaporating lotions, and, if occasion requires, it can be swung in an ordinary bed-cradle. The splint was brought to this country by a French patient, who, on landing from the steamer, was transferred to Bellevue Hospital. From the pattern thus obtained, Otto & Reynders, of this city, have manufactured a number.

Silicated Pasteboard Splints.—A very useful and durable splint is made by taking ordinary binder's board and soaking it in warm water till it is completely flexible. It is then taken out, dried, and rubbed on each side with the strong solution of silicate of soda, when it is ready to apply to the limb and mould in position by means of a bandage. After twenty-four hours it is exceedingly hard, and serves a valuable purpose for coaptation-splints.

Use of Rubber Catheters in Cases of Enlarged Prostate.—A patient entered the surgical service some time ago, suffering from retention of urine. An examination of the case revealed an enlarged prostate. After a gum-elastic instrument failed to enter, an India-rubber catheter of size No. 10 was employed, and entered the bladder without difficulty. Rubber catheters have come into use also in cases of paralysis of the bladder, where it is considered advisable to leave the control of the bladder in the patient's own hands. They have the advantage of being without danger in their introduction, and at the same time requiring no skill in following the course of the canal.

Burns, Superficial.—When the patient comes under observation in superficial burns, the lead-and-opium wash is applied till swelling and redness subside. After this, thick mucilage is painted over the burn, and the moist surface of the mucilage dusted with lycopodium.

When the injury is more severe, involving and destroying the skin, warm-water dressings are used till the slough separates. The granulating surface is then painted over with a solution of nitrate of silver (thirty grains to the ounce). The pain caused by this application, though pretty severe, lasts only for about ten minutes. The great advantage of this plan of treatment consists in the fact that no suppuration takes place beneath the scab.

OBSTETRICAL DIVISION.

Puerperal Mania; Treatment by Chloral and Bromide of Potassium.—The patient, aged thirty years, had been suffering severe anxiety, previous to and during labor, from some domestic trouble. The position was transverse, and delivery accomplished by version. Following the labor were severe after-pains, for which morphia was administered. That night the pulse ran up to 130 per minute, the temperature to 102½°, and with this fever marked delirium set in. The delirium continued for two nights and one day, when the treatment, which had been morphia with veratrum viride, was changed to bromide of potassium, with hydrate of chloral. Two hours after the latter remedies had been administered, the patient slept, and on awaking was perfectly rational. This improvement continued.

Puerperal Fever.—The treatment relied on in this disease consists in the administration of morphia for the relief of pain, with large doses of quinia, and sufficient veratrum viride to control the pulse. When the prostration is marked, brandy is freely given.

CHARITY HOSPITAL, NEW YORK.

SURGICAL DIVISION.

Villous Growth of the Walls of the Bladder.—Some time ago a patient entered Charity Hospital, suffering from retention of urine, which had existed for four or five days. On admission, the skin was cold, countenance pale, pulse rapid, voice husky, and altogether the patient was in a state of collapse.

The catheter was introduced, but no urine passed; even after injecting the bladder with water, only some clots of blood came away. When the instrument was moved around in the bladder, the sensation communicated to the finger was as if it were stirring up some clotted substance; percussion over the pubes elicited a dull note. Twenty hours after admission the patient died.

Autopsy.—The anterior wall and sides of the bladder were occupied by a papillomatous growth which almost completely filled the cavity of the organ. No urine was detected, but a certain amount of blood, which served partially to distend the viscus. Kidneys were slightly fatty.

Necrosis of Ilium; Cure.—The patient was a German, aged thirty-five, who had extensive necrosis of the anterior portion of the pelvis.

Previous to the present operation, he had been operated on three times, and after the last time had a sinus extending from the crest of the ilium down and in for about four inches, separated from the pelvic viscera only by a layer of fascia. At the present operation the excavation was carried to the acetabulum, and posteriorly to the tuberosity of the ischium, a portion of the ischium being also removed. The cavity of the wound was filled with picked lint and balsam of Peru.

After the third day, the wound was cleaned out, and picked lint introduced as before. This daily dressing was continued till the wound closed. There was no injury to the joint at any time. The case showed the importance of completely removing all trace of dead bone at the operation, as in all probability this had not been done at previous operations.

FOUNDLING ASYLUM.

DISEASES OF CHILDREN.

Pneumonia.—The pneumonias are mainly treated by the use of quinia internally, with the application of linseed-poultices to the chest. When marked prostration has developed, brandy is given.

Exanthemata.—As soon as an exanthem develops, it is immediately quarantined, and it is the intention of the Sisters, when relieved from the present pecuniary difficulties, to quarantine for eleven days all children admitted.

Diphtheria.—It has been the experience that topical applications to the inside of the throat, in diphtheria, have been of advantage. It is very obvious that no application to a diphtheritic surface would be liable to check the constitutional disease, but the removal, as soon as it forms, proves grateful to the little patient, and at the same time assists the cure of the granulating surface.

Eczema.—In the dispensary department of the institution, many of the out-children develop eczemas, and a treatment that yields excellent results is the application of tar-ointment, with the internal administration of Fowler's solution, and wine-of-iron. Before applying the ointment, the crusts are to be softened and removed by the use of sweet-oil or lard.

Marasmus.—Cod-liver oil internally, in marasmus, seems to be as valuable an agent as can be administered. Some observations are about being made as to the efficacy of prepared foods, but no results so far have been obtained.

Correspondence.

THE NEW MEDICAL LAW OF THE STATE OF NEW YORK.

> "I who was once as great as Cæsar,
> Am now reduced to Nebuchadnezzar;
> And from as famed a conqueror
> As ever took degree in war,
> Or did his exercise in battle,
> By you turned out to grass with cattle."—HUDIBRAS.

As a salutatory address to the "virtuous Legislature of 1874" we know of nothing more appropriate for this new-born law than the above quotation, as the accompanying history of it will show. This law, which by general statute became operative on June 1, 1874, is entitled "AN ACT to regulate the Practice of Medicine and Surgery in the State of New York."

The title is old, several previous acts having had about the same. Judging from the probable effect of the law, its title is quite as appropriate as that of the act of 1814 relative to certain county medical societies, which read as follows: "AN ACT to raise money to build a bridge over Allen's Creek, in the town of Le Roy, and for other purposes." This one regulates the practice of medicine as one of that title would.

It will be seen, by the comparison we below give, whence it is extracted, and by most readers also, what a legislative monstrosity it is. As originally presented in the Senate, the word *midwife* was retained, but it did not get through the Legislature; a fact which may perhaps be credited to the hopeless ignorance, in matters of medicine, of the average legislator, not understanding the dangerous character of a large majority of so-called midwives.

The bill has in fact come into legal life without a midwife, and, in addition to its having been conceived in weakness, as will be seen, has been destructively crippled during parturition. It may, with striking propriety, be called a legislative "what is it," for, had it not received the approval of so serious, so practical and astute, and so patriotic a man as Governor Dix, it might have been justly regarded as one of the higher sort of burlesque acts which have occasionally, from all time, served as nonsense to relieve our annual Solons at Albany from their oppressive wisdom. Its antecedent history is as follows:

Under the auspices of the New York Medico-Legal Society, and after a careful study of the whole subject, during a period of more than two years, a bill was agreed upon by both the medical and legal members of the committee in charge of the matter, and presented to the Legislature in Assembly, January 24, 1872, with the title of "AN ACT to protect the People against Quackery and Crime."

The State of New York paid for printing it, and, almost at once, copies of it were extensively circulated among all classes, supposed to be unfavorably affected by its provisions, but with the addition of a front page, bearing in attractively large type the following:

"NOTICE AT ONCE!

"The immediate attention of every physician, not a member of an Allopathic County Medical Society; of every advertising physician; of every proprietor of a patent medicine, *and of every druggist* who does a counter-practice, is called to the accompanying iniquitous act,[1] the passage of which would interfere with, or cause a total destruction of business; for who, after outraging the allopathic code of medical ethics, would be allowed, under any circumstances, a license, no matter how well qualified he might be!

"The passage of such an act means ruin to many, and loss to all, who are outside the pale which a bigoted and selfish school is endeavoring to raise, for the purpose of enriching themselves, under the pretext of anxiety for the public good. Publishers of newspapers should remember that it is not the regulars who pay, and that the passage of this act would seriously affect their balance-sheet.

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[1] The attention of the profession, and of the members of that Legislature, is called to the member of the Public Health Committee of that year, who habitually used this term.

"This bill has already been read twice, and it behooves every one interested to act at once, and use all their personal interest with members, and otherwise, to prevent its becoming a law.

"Let each one act, and act promptly!"

Clairvoyant power is not needed to see that this circular was written by a medical man well informed in all the tricks of mountebanks and ignorant practitioners. Of course, its object was of the *black-mail* kind.[1]

The prospects of its passage having been thus ruined—we cannot say at what cost to the quacks—the same bill was introduced in Assembly, March 13th, of the same year, under the title of "AN ACT relative to the Medical Laws of the State of New York," and, after passing both Houses, was vetoed by the Governor, in accordance with the advice of one of the oldest physicians in Albany—who opposed it on the ground that it is not the business of the medical profession, nor of the law, to interfere for the protection of citizens from exposure to the chances of becoming the victim to false pretenses, whether the pretender be an ignorant doctor or an ignorant lawyer. It was again introduced during the session of 1873, but, for want of what is called *pushing*, arrived at no definite stage. The "virtuous though poor" Legislature of 1874 has again revived it, and what the result has been the reader can judge, as we give all the essential points of the original bill of 1872, together with its absurd extract.

THE BILL OF 1872.

§ 4. It shall be the duty of the aforesaid censors of the county and district medical societies, and they are hereby empowered at their discretion to summon before them, and to examine relative to professional qualifications, any person or persons resident in their respective counties or districts, who, by sign, or advertisement, or by any means whatever, offer their services to the public as practitioners of either medicine, surgery, or midwifery, or who, by such sign or advertisement, simply style themselves doctor; and if such examination satisfy said censors that the person examined is qualified to practise, said censors shall issue a certificate to such person expressive of the branches of the medical art they find said person qualified to practise, and such certificate shall be lawful authority throughout this State to practise in all the branches of medicine therein mentioned; and any such certificate permitting to practise medicine or surgery shall be accepted by the various aforesaid medical societies as sufficient evidence of professional qualification for membership in them. Said censors may also revoke any certificate so granted, if, in their judgment, the person holding it has, by crime or misdemeanor whereof such person shall have been duly convicted, forfeited all right to the public confidence; and the aforesaid censors shall keep a book or register, in which they shall enter the names, place of business, name of the college, or other source of the diploma or license, of all to whom they issue the aforesaid certificates.

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[1] To the everlasting shame of the State Medical Society, it voted to also disapprove the bill, both in 1872, and as we are informed in 1873, thus aiding and abetting this infamous proceeding. It is just, however, to state that the vote was a very small one, quite one-sided, and very cliquey.

§ 5. Every practitioner of medicine, surgery, or midwifery in the State, shall be required, and they are hereby commanded, to obtain the aforesaid certificate from the censors of some one of the aforesaid medical societies of this State, which certificate shall set forth that said censors have found the person to whom it was issued qualified to practise all of the branches of the medical art mentioned in it; and said certificate must be recorded in a book provided and kept for the purpose by the county clerk of each county in the State. Said book so provided and kept in the county clerk's office, shall bear the title and inscription, and shall be called the Medical Register of the respective county in which it is kept; and it shall provide for the name, in full, of the person whose certificate is therein recorded, date and place of its issue, branches of the medical art it permits to practise, names of the censors who have signed it, and a place for such additional remarks as may be of public interest; and for making such record the county clerk may collect twenty-five cents. The aforesaid Medical Register shall be always accessible, for reference, to all registered physicians, surgeons, midwives, and officers of boards of health; and any person who shall practise medicine, surgery, or midwifery in the State of New York, or who shall sign a certificate of death for purposes of burial or removal, whose aforesaid certificate from the censors is not found recorded in the aforesaid Medical Register of the county wherein such person is actually practising, may be proceeded against for violation of the provisions of this act.

§ 6. In the exercise of the discretionary power permitted by the fourth section of this act, the said censors may register the names of, and issue certificates to, all physicians or surgeons admitted to membership in their respective societies, without examination. And also to all such persons as may furnish evidence, by diploma from some medical college or university, or by certificate from some one of the aforesaid medical societies of this State, which shall satisfy said censors that the person so presenting credentials, has been deemed, after due examination, by a legally authorized faculty or board, as properly and adequately educated to practise the branches to which such person pretends, and the certificate so issued by the censors of any of the aforesaid societies of this State shall, unless it have been previously revoked by such society, be valid for all the purposes of this act, in every county of this State; and for neglect or failure to record the same in the aforesaid county Medical Register of the county in which the person holding it is actually practising, the person so neglecting, thirty days after notification, shall be liable to a fine of twenty-five dollars, and which the president of any such medical society shall sue for and collect, and such fine, when collected, shall be placed in the hands of the treasurer of such society as part of its funds.

§ 8. The censors of each medical society aforesaid shall notify the resident practitioners of medicine, surgery, and midwifery, in their respective counties or districts, of the terms and requirements of this act, and shall request such persons, so notified, to comply with those requirements within thirty days after such notification; and if such person shall not, within the time specified in the notice, or within such further time as may be allowed by special arrangement with said censors, not exceeding ninety days, comply with the requirements herein made of physicians, surgeons, or midwives, as the case may be, such person shall be subject to all the provisions and penalties prescribed by this act for any violation of the same, and the president of the society making such request shall, and he is hereby required to at once, commence the proceedings authorized by this act against such person.

§ 9. It is hereby declared a misdemeanor for any person to practise medicine, surgery, and midwifery in this State, unless authorized so to do by a license or diploma as herein described, which shall be approved by the aforesaid censors; or who shall so practise under cover of a medical diploma fraudulently or illegally obtained; or who shall not have a certificate from said censors, expressive of approval of the qualification of such person to practise all the branches named in such certificate, ascertained by an examination before said censors; and any person found guilty of such misdemeanor shall be punished by imprisonment not less than one month, nor more than one year, or by a fine of five hundred dollars, at the discretion of the court before whom such person may be convicted; and all such fines, when collected, shall go into the treasury of the county medical society bringing the action.

THE PRESENT LAW.

LAWS OF NEW YORK.—By Authority.

[Every law, unless a different time shall be prescribed therein, shall commence and take effect throughout the State, on and not before the twentieth day after the day of its final passage, as certified by the Secretary of State. Section 12, title 4, chapter 7, part 1, Revised Statutes.]

CHAPTER 436.

An Act to regulate the Practice of Medicine and Surgery in the State of New York.

Passed *May* 11, 1874.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Every practitioner of medicine or surgery in this State, excepting licentiates or graduates of some medical society or chartered school, shall be required, and they are hereby commanded to obtain a certificate from the censors of some one of the several medical societies of this State, either from the county, district, or State society; which certificate shall set forth that said censors have found the person to whom it was issued qualified to practise all of the branches of the medical art mentioned in it. And such certificate must be recorded in a book provided and kept for the purpose by the county clerk of each county in the State.

§ 2. The censors of each medical society aforesaid shall notify all practitioners of medicine and surgery of the terms and requirements of this act, and shall request such persons, so notified, to comply with those requirements within thirty days after such notification; and if such persons shall not, within the time specified in the notice, or within such further time as may be allowed by special arrangement with said censors, not exceeding ninety days, comply with the requirements herein made of physicians or surgeons, as the case may be, such persons shall thereafter be subject to all the provisions and penalties prescribed by this act for any violation of the same, and the president of the society making such request shall, and he is hereby required to, at once commence the proceedings authorized by this act against such person.

§ 3. It is hereby declared a misdemeanor for any person to practise medicine or surgery in this State, unless authorized so to do by a license or diploma from some chartered school, State board of medical examiners, or medical society, or who shall practise under cover of a medical diploma illegally obtained; and any person found guilty of such misdemeanor shall, for the first offense, be fined not less than fifty nor more than two hundred dollars. For any subsequent offense, not less than one hundred nor more than five hundred dollars, or by imprisonment not less than thirty days, or by both imprisonment and fine; and all such fines shall go into the county treasury of the county bringing such action.

STATE OF NEW YORK, }
Office of the Secretary of State. } *ss.:*

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom, and of the whole of said original law. DIEDRICH WILLERS, JR.,
Secretary of State.

In this exhibition of the two bills, only such sections of the original bill are given as have been, even in the slightest way, alluded to in the now existing law. In the apparent effort to simplify the original, it will *perhaps* be seen that every element of vigor and practicability, as respects public need, has been, so to speak, squeezed out. While it requires "every practitioner of medicine or surgery" to obtain a certificate or license from the censors named, it, at the same time, excepts nearly all of them, or at least permits such a multitude of exceptions to its requirements, that it defeats its own objects, as well as those of the bill of 1872, and completely abolishes the means which that bill provided for compelling every one practising, or offering to practise, to obtain a license. The law applicable to and defining the duties of such censors, as respects granting licenses, is only conditionally obligatory, to wit: if the party present certificate of study under pupilage for a prescribed time, then the censors are obliged to examine. This new law would find large numbers — and many very worthy practitioners — totally unable to comply with the requirements of existing law or ordinance for even *admission* to examination. The result would, in many cases, be great oppression and wrong to persons quite as competent to practise as those who are designated to examine them. By this law, *competence* is not the chief requirement, but the compliance with certain routine regulations as to time spent in study, out of and in college—confessedly the worst possible test of one's qualification to practise the art of medicine. The bill of 1872 required the examination of all unlicensed persons practising, regardless of place or time of study, and, if found competent, gave them right to a license. This law, by requiring the registration, in the county clerk's office, of the certificates issued to these previously unlicensed persons only, has rendered the discovery of such persons practically impossible, and consequently itself a dead letter. The original bill required every person practising, or offering to practise, to be registered. Under its provisions, an inspection of the register would furnish all the evidence required by the censors, to summon any party before them to present credentials or submit to examination.

The feeblest mind, it seems to us, ought to see at once that the only way to control licenses is, first, to register all about whose qualifications no doubt is entertained. That done, the reaching of the doubtful practitioners is a mere matter of official routine.

By the actual law, the censors are required to notify *all* practitioners of its requirements, notwithstanding the fact that it makes no requirement whatever of licensed practitioners. As it provides no means by which the censors can ascertain whether any man or woman has a license or not, parties receiving such notification will be foolish to pay any attention to it, particularly if they have no license. Things will remain precisely as they are, unless an informer volunteers his services. The allegations of informers may be sufficient to move a district attorney, but we doubt if they will be acted upon by presidents of county medical societies, who, by one section of this incoherent legislative farce, are required to "*commence proceedings*," while, in another, it speaks of the county as bringing the action.

This law requires very considerable expense, in both time and money, of the medical societies, and then turns the fines, if any be collected, into the county treasury, instead of into that of the society bringing the action, as the original one did, where it would at least partly pay the expenses of the society's labor for the public good. It is possible that this law may be of limited applicability in rural districts, where the privacy of life is unknown; but, in the metropolis, and in the large cities and villages, it may at once be regarded as a joke; and the practitioners therein have only to go quietly on, as if no such law existed, and let

> "Not a wave of trouble roll
> Across their peaceful breasts."

The bill of 1872 could no doubt be reduced to half its original length, and still remain a most effective and useful law; but this miscarriage is a scandal to medical legislation, and a disgrace to its progenitors. It is a new proof of the fatuity of the average medical legislator.

Stephen Rogers, M. D.

Proceedings of Societies.

THE NEW YORK PATHOLOGICAL SOCIETY.

Meeting held May 13, 1874.

Dr. White in the chair.

Dr. E. D. Janeway exhibited a gall-stone taken from a woman seventy years of age, of whom the history was given. Death occurred from pneumonia January 13th. At the *post mortem*, twenty-eight small gall-stones, and two as large as marbles, were found in the bladder. The case was of interest, as showing that jaundice may disappear even when there are calculi in the gall-bladder, and when some of them much larger than these may not have been discharged.

Dr. Janeway also presented a case of cancer of the liver, commencing in the gall-bladder, and involving the liver and lymphatic glands. The patient was a German woman, aged thirty-nine years.

Post mortem.—Heart and lungs normal; liver considerably enlarged; left lobe, also right aorta, presented over the surface whitish points. The feeling to the hand on the surface of the liver was of a granulated character. In the gall-bladder were found a number of calculi, about twenty, which were larger than those found in the previous specimen, and their color was deeper, owing to a greater amount of pigment contained in them.

Dr. Janeway reiterated the advice of Virchow in impressing the importance, in making *post mortems*, of always examining the gall-bladder. By so doing, the fact will be more and more impressed upon the examiner that very few cases of cancer occur primarily in the liver. The primary seat of the disease will be found to be situated in the pyloric portion of the stomach, or in the intestines, or the gall-bladder, while the liver will be secondarily affected.

Dr. Erskine Mason exhibited a specimen showing injury done to the urethra by a patient who had been accustomed to pass a catheter for himself. The urethral mucous membrane had been perforated in several places. The patient died of pyæmia.

CASE OF PYO-NEPHROSIS.

Prof. Loomis presented a small bottle of yellowish-red fluid taken from a man at Bellevue Hospital on the 12th of May. The fluid was presented, not that there was any thing peculiar about it, but in order that the case to which it relates might be put on record. This fluid was taken from a man thirty-six years of age, who was admitted on the 17th of February. He was a seaman of moderately temperate habits; had never suffered from syphilis, as far as could be ascertained. He had a clear hereditary history; had always been in robust health, with the exception of two attacks of subacute rheumatism, up to the third year before he was admitted, when for the first time he was seized with intense pain in the left lumbar region, extending around to the inguinal region, accompanied by a tingling sensation at the end of the penis, the urethra, and the left testicle. This pain was paroxysmal in character, and continued about two and half hours, and its subsidence was followed by the passage of a large quantity of milky urine. After recovering from that particular attack, his urine would be natural. At no time afterward did he suffer pain of that character in the left lumbar region. He gave a characteristic history of the passage of a gall-calculus. Fourteen months previous to admission he noticed in the left lumbar region a lump or tumor, discovered to be about the size of the fist. It was movable, not tender on pressure; it could be handled with perfect impunity by the patient without pain or inconvenience. He suffered no pain from the tumor excepting after violent exercise, when it felt sore and gave him some inconvenience. On admission, physical examination showed the lungs to be healthy, heart slightly hypertrophied; the second sound greatest in intensity at the right side of the sternum; the arteries throughout the body tense, feeling like cords. On the right of the abdomen the tumor was felt occupying the left lateral region, extending forward very nearly to the median line and backward to the lumbar region, ovoid in shape, the long diameter transverse, and nodulated irregularly, not tender on pressure, and giving a sensation of fluctuation when felt posteriorly while the fingers tapped the anterior portion of the tumor. The urine passed amounted to about ninety ounces in the twenty-four hours, and was albuminous. Dr. Loomis diagnosticated the case one of pyo-nephrosis, and suggested, by way of treatment, the aspirator. Previous to this, needles had been passed into the tumor, and pus had been discovered. With the aspirator, the needle being introduced two inches, twelve ounces of pus were withdrawn, which was not examined under the microscope, as far as known. After aspirating the tumor, it diminished in size; still a hard mass was felt situated farther back in the lumbar region than originally felt. Then the tumor began to increase in size again, and gradually continued to do so until it gave the patient considerable inconvenience and some pain. His urine was examined from day to day, and was found to contain albumen at each examination. After the second aspiration it was found to contain hyaline casts. The temperature during all this time never rose above 100°, and his pulse rarely reached 96; some days it was 96. When Dr. Loomis took charge of the ward in which this man was, a consultation was proposed, at which nearly all the hospital surgeons and physicians were present; and the proposition was before them of entering this tumor from behind, in the position where it was prominent, and establishing a drain after the manner suggested and practised recently by Dr. Frederic D. Lente, of Cold Spring, N. Y. The consultation decided that this was the proper method of procedure, and, on the 12th of May, Dr. J. C. Crane made an incision commencing two inches above the anterior spinous process of the ilium, extending backward very nearly to the spinal column. He went down gradually until he reached the quadratus lumborum muscle, and entered the tumor with some difficulty and drew off about forty ounces of fluid like the portion shown. After entering the sac a drainage-tube was introduced a quarter of an inch, and retained in the opening by adhesive straps. The fluid was examined and found to contain pus, hyaline casts, and blood. The patient was reported as progressing favorably. The pus was discharging freely; pulse 104, and temperature 101°.

Dr. F. D. Lente, being called upon for a description of the operation referred to, said that it was simply the operation for lumbar colotomy until the sac of the kidney was reached, then opening it instead of opening the intestine. The operation was perfectly simple, rather easier than for colotomy, and the only one to be performed in similar cases. His own case, which was that of a young girl, was the first of the kind ever performed.

In answer to a question, Dr. Lente said he made the incision transversely, in order to avoid wounding the lumbar arteries. The most important point in this operation was, to get a large opening and maintain it. The opening should be at least three-eighths of an inch. There is no objection to have it large. The danger was, that the opening might degenerate into a fistula. Another advantage in having a large opening was, that calculi would be expelled by force of contraction.

Mary Putnam Jacobi, M. D., exhibited an ovary from a woman who had had syphilis a year before death.

Dr. F. D. Lente, of Cold Spring, presented a specimen of intramural fibroid tumor occupying the anterior wall of the uterus. In this case the hæmorrhage was excessive. The case was interesting, especially as regards the treatment. Almost every thing was tried, and finally hypodermic injections of the fluid extract of ergot (Squibb's). The case improved under the treatment. The amount used was twenty to thirty minims daily.

Dr. Janeway mentioned the fact that hydrated chloral, in the strength of five to ten grains to the ounce of water, is an excellent preservative fluid for morbid specimens.

The Society then went into executive session.

At the meeting held May 27th, Dr. Knapp in the chair, Dr. Loomis related the result of the operation performed at Bellevue Hospital upon a patient for pyo-nephrosis. The operation was performed on the 12th May, at two o'clock P. M. The patient died twenty-five hours after the operation.

Post mortem.—On laying open the abdomen, a tumor was found occupying the left side, upper third, extending into the lumbar region. This tumor corresponded to the one recognized during life; over this tumor, anteriorly, passed the descending colon, pretty well fixed upon its surface. On the inner border of the tumor, the lower portion, where the reflection of the peritonæum occurs, was found a small amount of pus and serum. There was no evidence of general peritonitis. The ureters were distended, and readily admitted the index-finger. About one inch above the bladder they were completely occluded.

Dr. T. E. Satterthwaite exhibited portions of the heart, spleen, kidneys, and brain, of a man who had died suddenly. The history of the case was imperfect. The *post mortem* developed some interesting points.

NEW YORK ACADEMY OF MEDICINE.

OBSTETRICAL SECTION.

Dr. Allan S. Church in the chair.

Dr. S. T. Hubbard related an interesting case of congenital syphilis. A widow, who had given birth to two healthy children by her previous husband, married a second time, a man who supposed himself cured of syphilis. She soon became pregnant—went her full term—but the child died as soon as born. Her second child likewise died soon after birth. A third child was born; appeared at birth perfectly healthy, and weighed ten pounds. It nursed its mother, and, at the age of four weeks, had many symptoms of congenital syphilis, similar to those of the previous children. It was treated internally by the iodide of potassa, and externally by anointing the body with mercurial ointment. At the age of six months, it had syphilitic erythema of the palms of the hands and soles of the feet; and it also died. The father then inquired of the doctor the cause of the death of his children, and he was told that syphilis was suspected; whereupon the husband confessed that he had, sixteen years previously, contracted the disease, but supposed himself perfectly cured long before his marriage. Under the circumstances, Dr. H. placed him under a regular anti-syphilitic course of treatment; and, as soon as his wife again became pregnant, gave her the iodide of potassa. At the proper time, she gave birth to a large child, which was nursed by a healthy wet-nurse. This child is now two years old, and, with the exception of occasional attacks of eczema, has had no trouble. It is well developed, and is in as good condition as children generally are at that age.

Dr. A. C. Post read a paper on "Diseases of the Mammary Gland during the Puerperal State," presenting some interesting facts from his own experience.

Dr. Caro mentioned three cases of congenital syphilis in children. The disease, in the first, appeared in the form of exostosis; the second, syphilitic onychia. The third, on account of a large collection of serum in the peritoneal cavity, was dead when born, though living at the beginning of labor.

Meeting held Thursday Evening, May 21, 1874.

Austin Flint, M. D., President, in the chair.

A meeting of the New York Academy of Medicine was held at the College of Physicians and Surgeons, on the evening of Thursday, May 21st.

Dr. WILLARD PARKER read an elaborate paper "On Some of the Injuries of the Brain and Nerves; the Sequences of such Injuries, and their Treatment."

Letters of thanks and acceptance were read from Sir James Paget and Sir Richard Owen, for the honor of their election as corresponding members of the Academy.

Dr. J. P. GARRISH read a biographical memoir of the late Alfred Underhill, M. D.

THE NEW YORK NEUROLOGICAL SOCIETY.

The President, Prof. WILLIAM A. HAMMOND, in the chair.

Stated Meeting, June 1st.

DR. T. M. B. CROSS read a paper on "Sciatica; being a Contribution to its Etiology and Treatment." Sciatica he defined as a painful affection of the sciatic nerve or its branches, and one of the most frequent of the neuralgias. The paper was followed by a long and spirited debate.

NEW YORK SOCIETY OF NEUROLOGY AND ELECTROLOGY.

MEREDITH CLYMER, M. D., President, in the chair.

A MEETING was held May 18th, at the College of Physicians and Surgeons. Previous to the regular exercises, Dr. Lincoln, of Boston, a corresponding member of this Society, presented a communication in which he explained the resistance of a body to electrical currents, and the absolute amount of force employed during ordinary medical applications of electricity.

Dr. VAN BIBBER exhibited the excellent result of his treatment by a rubber muscle in a bad case of ptosis palpebræ. He also presented a marked case of lead-paralysis.

Dr. KINNICUT presented a well-marked case of facial paralysis. In the primary stages of the disease the patient suffered from left trigeminal neuralgia.

Dr. EUGÈNE DUPUY, who was introduced by the President as an opponent of the views of Ferrier, regarding the localization of the motor functions of the brain, repeated the experiments of Ferrier on a dog placed under the influence of ether, and drew from them the following conclusions: 1. That it is possible, by exciting certain points of the cortical layer of the cerebrum to obtain contraction in every limb. 2. That, as a rule, the fore-limb of the opposite side is that affected. 3. That the electrical current must be propagated to the base of the cerebrum by exciting either the nerves which arise from it, or the base itself, or the pons Varolii. 4. That, if the dura mater be electrically excited, contractions are observed in the fore-leg, and generally in that of the opposite side. 5. The fact that the galvanoscopic frog is thrown into a state of contraction when its nerve is touched, seems to point to the cerebral mass far from the point excited, and demonstrates that the electrical current is propagated. 6. Contrary to the effects obtained by Ferrier, Dr. Dupuy has never obtained any effects upon the tongue, either of projection or retraction. 7. The whole cortical layer of the cerebrum is probably the scene of reflection for a certain kind of sensibility capable of exciting reflex action of motor or sensory nerves; but that its preservation is not indispensable for the manifestation of voluntary or even intelligent action. 8. On the animals on which Dr. Dupuy has experimented, contraction of the opposite limbs can still be produced even after the abolition of the optic thalami and corpora striata of the opposite side to that on which irritation has been applied.

Dr. Austin Flint, Jr., said that, in the experiments performed, two points were very evident: 1. That the currents employed were very diffused; and, 2. In three of the last experiments stimulation of the cortical substance of the cerebrum produced movements of muscles after the facial nerves had been divided, which showed the fact of irritation beyond the point of section of the nerves. He considered the points of Dr. Dupuy well taken.

He was followed by Dr. J. C. Dalton, Dr. Beard, and others.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Ellsworth Eliot, M. D., in the chair.

At a meeting held May 25th, the following gentlemen, on recommendation of the Comitia Minora, were unanimously elected members of this Society:

George W. Bigelow, a graduate in medicine of the Bellevue Hospital Medical College, 1874; Ambrose I. Eisenlord, of the University of the City of New York, 1871; James Bacon, of the Jefferson Medical College of Philadelphia, Pa., 1865; Constantine J. Maguire, Royal Medical College of Surgery, Ireland, 1869, and Licentiate from Kings and Queens College of Physicians, Ireland, 1869, Licentiate in Midwifery from the Rotunda Lying-in Hospital, Dublin.

Dr. Charles P. Russell then read the paper of the evening, on the subject of hydrophobia. During the present year, thus far, he said that four persons had died from the disease in this city. In 1873 twenty-one cases of the disease were reported, being more than in the four preceding years.

After a brief historical sketch of the disease, Dr. Russell gave a clear description of its leading characteristics, with some practical suggestions as to its prevention. He condemned the practice of muzzling dogs as useless, and recommended a heavy tax on the owners as a means of preserving valuable dogs and getting rid of the worthless ones.

Dr. Garrish had seen two cases of hydrophobia, one of which was cured by the use of belladonna and assafœtida, with ice-bags to the spine.

Dr. J. C. Dalton said he had never seen a case of the disease, but he thought it important to correct the popular errors regarding madness in dogs. A few practical rules might be published by the Board of Health for that purpose, bearing especially on the necessity of keeping suspected dogs until the fact of their madness had been established. Dead dogs told no tales.

Dr. Alonzo Calkins recommended the use of a warm bath (93°) in hydrophobia, in connection with the faradic current.

After some further remarks by Dr. Caro and others, the Society adjourned.

THE NEW YORK MEDICAL LIBRARY AND JOURNAL ASSOCIATION.

Dr. J. C. Peters in the chair.

At a meeting on the evening of May 15th, Dr. Thomas R. Pooley read a paper on "Syphilitic Iritis." He sketched, first, the symptoms which more or less characterize all forms of iritis; and, secondly, those belonging more especially to the syphilitic forms of the disease. He treated the subject as exhibiting itself in condylomata or gummy tumors of the iris, their development, course, and pathology; a peculiar form of exudation, whose symptoms occur in syphilitic iritis; the varieties of syphilitic affections in which iritis is more frequently developed; and the complications with which iritis is more frequently associated. When occurring in the negro, syphilitic iritis assumed a particularly unfavorable aspect. It was accompanied by papular syphilides, opaque corneæ, and the processes terminated in suppurative irido-choroiditis.

The subject was treated in an able and systematic manner, and, at the conclusion of the paper, it was discussed by Drs. Pomeroy, Sturges, Chamberlain, Post, and others.

At a meeting held May 22d, Prof. W. A. Hammond read a paper on the "Effects of Sulphate of Quinine on the Intra-Cranial Circulation."

The essayist began by stating that the origin of the paper was the result of a discussion, at a recent meeting of a society at which Dr. Roosa read a paper on the etiology and treatment of diseases of the internal ear, as to whether quinine caused hyperæmia or not. Dr. Hammond at that time contended that it did, while Dr. Jacobi argued that it produced anæmia. But, in order that his opinions might be either confirmed or refuted in this regard, the author of the paper determined to experiment upon himself, aided by the new and improved methods of research upon intra-cranial circulation. He was assisted in these experiments by Dr. Roosa. The result was marked hyperæmia of the cerebrum. Not content with experimenting upon himself, Dr. Hammond extended his observations upon dogs, with the assistance of an instrument invented by himself and by Dr. Weir Mitchell, of Philadelphia, almost simultaneously, about four years ago. The skull of a dog was trephined, and the instrument screwed into the opening made, so that a thin, elastic membrane, at the bottom of a tube, would press upon the pia mater. The tube was provided with a colored liquid, and a graduated scale placed behind the tube. Ten grains of the sulphate of quinine, with sulphuric acid, was then introduced into the cellular tissue of the animal, and, in a short time, the fluid rose. In 3 hours 35 minutes, the fluid had risen to one degree on the scale; 4.10, to 10°; at 4.30, to +15°, when it began to fall, and at 8.15 it had fallen to zero. The whole effect was based upon an increased amount of blood in the brain, and the experiments showed a positive hyperæmia and congestion. That it produced anæmia was not an opinion based on fact. The doctor considered that quinine was not a substitute for ergot. It might be used with benefit, to prevent a miscarriage. It was not of the slightest use as a remedy for enlarged spleen. No one would recommend it in hyperæmia or congestion; whereas, in anæmia, its effects were good. Many physicians had prescribed it, with marked benefit, in anæmic headache. He did not know how this could be, unless its effects were such as he had ascribed to it.

Dr. D. B. St. John Roosa mentioned several cases in which the administration of quinine produced undoubted symptoms of congestion and inflammation, and gave the results of his experiments in this connection.

Dr. Mary Putnam Jacobi questioned some points in the experiments of Dr. Hammond, who afterward made some explanations.

Drs. Munde, Caro, Post, Beard, Garrish, and others, followed in debate.

THE NEW YORK MEDICO-LEGAL SOCIETY.

Clark Bell, President, in the chair.

The New York Medico-Legal Society held its regular monthly meeting, at the usual place, on Thursday, May 28th.

The following gentlemen were elected resident members: Clinton Wagner, M. D., William M. Loew, Esq., John J. Mason, M. D., Alexander F. Newman, M. D., H. M. Morris, Esq., S. LeRoy Satterlee, M. D., W. J. Scott, M. D., William P. Woodcock, M. D., and T. Edwards Clark, M. D.

Prof. WILLIAM A. HAMMOND, M. D., then read a very lengthy paper, entitled "Morbid Impulse," which, he said, might be defined as a condition in which the affected individual was impelled, consciously, to commit an act which was contrary to his natural reason and against his normal inclinations.

We regret that, for want of space, we are unable to give even a synopsis of this essay, which called forth some discussion, in which Drs. MEREDITH CLYMER, PARSONS, and JACOBI, participated.

NEW YORK LARYNGOLOGICAL SOCIETY.

Meeting of April 9, 1874, *at No.* 4 *East Twenty-ninth Street.*

DR. CHARLES McBURNEY, Jr., in the chair.

DR. McBURNEY called the attention of the Society to a patient of his, a woman, aged thirty-nine, with a two years' syphilitic history, who presented herself to him five months ago, with extensive ulceration, involving the posterior walls and pillars of the pharynx, including the mucous surface of the epiglottis. Anti-syphilitic medication and appropriate local applications controlled the spread of the ulcer, which healed entirely after two months' treatment, leaving, as a result of the extensive destruction of tissues, a circular stricture of the pharynx, just above the level of the arytenoid cartilages, of about an inch and a quarter in diameter, with the epiglottis adherent to the edge of the stricture. Dysphagia followed cicatrization, and was only relieved by amputation of one-half of the hypertrophied epiglottis, and section of the cicatricial union of it to the edge of the pharyngeal cicatrix.

This was followed by ability to swallow, and Dr. McBurney now proposes to increase the calibre of the pharynx by excising portions of the circular cicatricial edge of the stricture.

Dr. Lefferts detailed the clinical history of a patient from whose neck he had extirpated a thyroid tumor, at the New York Eye Infirmary, and upon whom he had afterward performed the operation of thyrotomy, and removed two intra-laryngeal growths.

Dr. Beverley Robinson read a paper on "Naso-Pharyngeal Irrigation," in which he expressed his conviction that, owing to the anatomical and physiological characteristics of the pharynx and nasal chambers, none of the instruments now used for cleansing the parts succeeded in removing all the obstructions in cases of long-existing disease.

Dr. A. H. Smith recognized the difficulty mentioned in the paper, and, instead of the Weber douche, now used Davidson's syringe, with a rubber nursing-bottle-tip fitted to it, and thought that the interrupted injection of the nose was more successful than the continuous stream.

Dr. Frederick A. Burrall exhibited a tube about five inches long and one-sixth inch in diameter, devised by himself, for injecting the nose, and showed that it was perforated, so as to project fluids, when fitted to a Davidson's syringe, at such angles as to bring them in contact with the mucous membrane of all the nasal meati.

Dr. Bosworth said he used habitually the syringe of Davidson, with an elastic tip, which he introduced behind the pharyngeal curtain, and injected thus from behind forward.

After the reading, by the Secretary, of communications from Drs. Schrötter and Stoerk, of Vienna, Dr. Cohen, of Philadelphia, and Dr. Donaldson, of Baltimore, the Society adjourned.

Meeting of May 14, 1874, *at No.* 15 *West Twenty-sixth Street.*

Dr. R. F. Weir, President, in the chair.

Dr. Weir presented, for inspection, a female patient aged twenty, whose voice had failed gradually for two years, and who now speaks in a rough whisper. On left vocal cord is seen a papillary growth, occupying anterior and middle thirds; on right cord another growth is visible, which is attached to the anterior third. On phonation, the two cords approximate inadequately, and the growths of both sides overlap each other.

Dr. Charles McBurney introduced a man, aged twenty-seven, upon whom he had performed thyrotomy, for removal of two growths from the larynx: one a small tumor, attached to anterior part of right cord; the other a larger growth, the size of a filbert, attached below and independently of left cord, and between the arytenoids. Tumors removed by scissors. After six days, canula was removed—wound having united by first intention; and, on the eighth, patient returned to his house with voice improved, and free from dyspnœa.

Dr. G. M. Lefferts detailed the history of a child who died in convulsions after insufflation of a fragment of coal into the air-passages. Dr. Lefferts was able to explore the larynx with a mirror, but found no foreign body therein. He performed tracheotomy, to relieve imminent suffocation. Respiration was restored temporarily, but death followed after two convulsions, and apparently from suffocation. The piece of coal was not within reach, and the existence of an obstruction to respiration in right lung, alone suggested the probable lodgment of the foreign body somewhere below the bifurcation of the bronchi on that side. No autopsy was made.

Society adjourned.

Meeting of June 11, 1874, *at* 110 *East Thirty-eighth Street.*

Dr. Andrew H. Smith in the chair.

Dr. S. B. St. John, Jr., demonstrated a case of complete paralysis of left vocal cord, in a female patient aged thirty-three, the subject of a chronic laryngitis, which had existed three years, accompanied by almost complete loss of voice.

Dr. A. H. Smith called attention to a male patient, aged forty-five, who, in addition to irregular and paroxysmal contraction of the muscles of the neck, was the subject of spasm of laryngeal laxors—the laryngoscope showing an elliptical opening. Patient has cardiac hypertrophy, and his voice, though distinct, is of an abnormally high key.

Dr. Smith exhibited another patient, a man aged fifty-four, and called attention to the existence of œdema of both sides of the septum, and adenoid enlargement of the pharyngeal roof, which was observed with great ease in the rhinoscopic mirror, owing to the remarkably deep and capacious pharynx of the patient.

Dr. G. M. Lefferts invited the Society to examine the larynx of his case of thyrotomy and excision of both ventricles of larynx, the patient presenting himself with improved voice, and free from present laryngeal trouble.

Dr. Beverley Robinson introduced a man, aged forty, with unimpaired voice, and no disturbance of phonation or vocalization in exercising the chromatic scale, but who had absolute paralysis of left vocal cord. Patient has tubercle in apex of left lung, but no heart-disease.

After exhibition, by Dr. Robinson, of another patient, the subject of pulmonary emphysema and bronchitis, who showed, on laryngoscopic examination, a peculiarly rounded, thickened, and infiltrated epiglottis, the Society proceeded to executive session, and, later, adjourned by limitation.

Bibliographical and Literary Notes.

Art. I.—*A Clinical Study on Anal Ulcerations. Étude Clinique sur les Ulcérations Anales.* By Drs. J. Pean and L. Malassez, Paris, 1872.

As the title of this work indicates, it is a study of the various ulcerations around and upon the anus. It is based upon cases observed and elaborated by the authors, the one, the attending surgeon to the Lourcine Hospital of Paris; the second, his *interne.* In its scope, the work, though not introducing any thing essentially new, may be accepted as treating of more fully, and in one monograph, subjects which have been described partly in works on skin and venereal diseases, and partly in works on surgery. As such, combining greater detail and systematic description, the work is of considerable value. In our examination of it, as there are scarcely any controversial points, our duty will consist of analysis rather than of criticism. In classifying the various ulcers, the authors adopt a division based upon etiology and anatomy as follows:

A. Simple ulcerations which consist of—
  1. Erythematous erosions.
  2. Tolerant and intolerant fissures.
  3. Herpetic ulcerations.
  4. Chronic ulcers.

B. Venereal ulcerations:
  1. Blennorrhagic ulcers.
  2. Soft chancres.
  3. Syphilitic ulcerations.

C. Tuberculous and scrofulous ulcers.

D. Cancerous ulcerations.

The last class is not studied in this volume, but will be considered in a second or supplementary one, which will also treat of rectal stricture.

Erythema of the anal region may be induced and caused by foul discharge, copious sweating, hæmorrhoids, pediculi, pruritus, want of cleanliness, obesity, long walks, badly-fitting and rough clothes. One or more of these conditions may coexist in the same case. The erosions of the integument result from this erythematous condition, and they may be seated around the margin of the anus, in the sphincteric portion, and in the folds. They have a bright-red surface, ordinarily studded with little whitish points. They exhale an offensive odor, and their presence renders defecation painful. In some cases they become chronic. The treatment consists in carefully drying the parts, and avoiding chafing, and in the application of mild astringent lotions, starch in powder, lycopodium, and subnitrate of bismuth, with the interposition of soft linen. Repose is often very necessary. When internally situated, tampons saturated in glycerole of tannin, or other astringent solutions, are very beneficial. When vaginal discharges, hæmorrhoids, or worms exist, attention should be paid to their removal.

In division of fissures, the authors adopt the classification of M. Gosselin, making two varieties, the tolerant and the intolerant. They consider that the first form is rarely spoken of by authors for the reason that, perhaps, owing to its not being attended with severe symptoms, it escapes the observation of the physician and patient. They observed it quite frequently, as they adopted a rule of examining every woman who came into the hospital. They consider as causes of it: 1. The passage of a large and hard fecal mass after obstinate constipation. 2. From causes which tend to render the tissues thickened and less supple; as, for instance, a person having erythema from vaginal discharges becomes constipated, and in the act of defecation tears the tissues. Sodomy is also a cause of it, and the authors cite an illustrative case. This form of fissure is found either anteriorly or posteriorly to the anus, not on the sides. In order to expose it to view, they recommend that the patient should strain as at stool, while the surgeon everts the parts; or that Chassaignac's plan should be followed. This is done by introducing into the rectum a little bladder of India-rubber, and while in, expanding it by blowing it up, then withdrawing it; and this turns out the mucous membrane as it comes out, thus revealing any fissures or tumors. They also speak well of Sims's speculum. The base of the fissure is of a grayish red, and on close examination longitudinal striæ of this color can be seen. There is no adherent false membrane, no pus, but simply a little serous fluid. They are usually not deep, except when resulting from traumatism, nor are their edges thick or everted. On defecation no spasm is produced, nor any neuralgic symptoms, simply an acute pain. In some instances small warts develop on these fissures. The cure of this form is generally quite rapidly induced when the exciting cause is removed, but it may merge into the intolerant form, or even become chronic ulcer. The first result occurs in nervous persons, the second in those having piles. The treatment is very simple in the traumatic form, consisting in care, cleanliness, and rectal tampons coated with cerate. In the thickened condition of the parts we must avoid irritation, and use baths and mild stimulants. As regards the pathogeny of the intolerant form, the authors allude to the theories of Boyer and Trousseau; the former regarded the trouble as simple spasm of the sphincter ani, and thought that the fissure was an epiphenomenon; while the latter considered the fissure as the lesion, and that its irritation produced pain, which by reflex action induced the spasm. The authors think that these views seem, at first sight, more contradictory than they really are. They agree in their views with those of Chassaignac and Gosselin, who think this form of fissure the same as the first form, only that it is developed upon a person of very great nervous susceptibility. As proof of this view, they cite the fact that it usually occurs in that period of life in which nervous disorders are most frequent, and also particularly in women. The general characters and features of this lesion are similar to those of the first. The description given of the symptoms is the same with which all are familiar from other reading. As to treatment, they speak well of the method of Trousseau, who used astringent lotions, or injections, composed largely of tincture or extract of rhatany-root, sometimes even mild solutions of sulphate of copper, and laxatives. They have used with success a preparation composed as follows: Glycerole of starch sixty grains, extract of rhatany four grains, and extract of belladonna two grains. This is applied on *mèches* or tampons, and should be used while laxatives are given. Cauterization with a solution of nitrate of silver is also well spoken of in cases of severe pain. In very rebellious cases it is necessary to resort to operative measures. They are averse to excision of the fissure; they prefer the tearing process rather than the incision of Boyer, and thus recommend the procedure of Chassaignac. This consists in introducing a small *écraseur* through the canula of a trocar, which has been pushed through the integument about half an inch from the margin of the anus, and inward into the rectum, so as to include the sphincter, and then bringing it out at the anal orifice. When the trocar is withdrawn, a chain is inverted and carried through the canula, which is then slid off, leaving the chain which gradually cuts through the tissues. They think that this procedure is better than the subcutaneous incision of Blandin. They regard gradual dilatation as being objectionable, but think well of the quick or forcible method, performed by introducing the two index-fingers, or even both index and middle fingers, and then stretching until no resistance is felt. The authors think that supplementary dressing, with tampons covered with simple cerate or an astringent ointment, contributes much toward permanence of cure, and acts well by keeping up the dilatation.

The authors think that the chronic ulcer has not thus far been recognized by other observers, and that Curling has confounded it with the soft chancre. Briefly described, this ulcer results from fissures and soft chancres which have not been cured. It is generally developed in persons having hæmorrhoids. The general features of it are those of an exaggerated fissure, and, being seated at the margin, it may extend into the sphincteric portion of the rectum. The symptoms are a muco-purulent discharge, pain, and a constipated condition of the rectum. The course of these ulcers is slow, and their duration long. They are to be diagnosticated from fissure and soft chancre. Soft chancres were much more frequently met with in women than in men, and are generally due to auto-inoculation from vaginal chancres. They are generally seated anteriorly or posteriorly to the anal orifice, sometimes at its margin, sometimes a little distance from it. According to the observations of the authors, though they may extend as high as the superior border of the sphincter, they rarely go higher, as the mucous membrane above that point, they think, is not very susceptible to the ulcerative action. The shape of the ulcers of course varies with their situation. The authors think that they are rarely attacked with phagedena, and they almost deny the phagedenic chancre of Després. They state that this ulcer may be accompanied with condylomata, which are not the true kind, but mere elevations of the skin from subjacent inflammation. Buboes are a very less common complication. In the matter of treatment, cauterization and medicated tampons are chiefly relied upon.

The syphilitic ulcers of the three periods of the disease are met with here—those of the primary stage very rarely indeed, and they are always due to contagion. They are attended with no symptoms of any moment, and usually require very little treatment.

As to mucous patches, the point is brought out that they are more frequent in men at the anus than in females, in whom they are more frequently found upon the vulva, and in neither have they been observed in the rectum. The various forms which these lesions assume in this region are tolerably well described, and they allude in particular to the difference in appearance observed between them when seated in the folds of the anus, and when seated at a distance therefrom. The diagnosis is to be made between the first form and a simple fissure or a hard chancre, and in the second form between it and soft chancre. The treatment recommended is in the main frequent cauterizations, in which, we think, the authors are hardly abreast of the present state of our knowledge. Constitutional treatment is also necessary. No new observations are added as to the tertiary ulcers of the anal regions, as the authors merely quote a doubtful case reported by Sir James Paget.

The clinical description of tubercular ulcers of the anal region is not clearly drawn, and the illustrative case does not satisfy one thoroughly that the ulcer is of a tuberculous origin. Indeed, a suspicion forces itself upon us, that the ulcers here alluded to are merely very chronic neglected ulcers. Esthiomene of the vulva and anal region is regarded by the authors as a variety of lupus, and, although they give the details of two cases, they have not very materially advanced our knowledge beyond the point attained by Huguier, although they show, and certainly with truth, that this author included a primary and even secondary elephantiasic condition as a variety of this disease. It is to be regretted that our knowledge of this affection is not more clearly and sharply drawn.

The work is illustrated by four colored lithographic plates, which certainly represent the conditions of the parts in an admirable manner. With certain exceptions, we may say that the work is a good one, and of considerable value.

Art. II.—*Electro-Cautery in Uterine Surgery.* By John Byrne, M. D., M. R. C. S. E., etc. New York: William Wood & Co., 1874.

In his introduction Dr. Byrne indicates that his object, in giving to the profession the results of his study and experiments with the galvano-cautery, is to furnish a reliable guide for its intelligent use. Such a guide was greatly needed, and is adequately supplied in this little work.

He says, "A more extended acquaintance with the subject has but served to confirm my views and opinions regarding the merits of bloodless surgery," and most certainly the cases he presents, though, as he says, merely illustrative, most strongly support his advocacy of the method.

In intra-vaginal operations the bloodless method has great advantages, and the author succeeds in presenting them in the most convincing manner.

Before describing the battery he has found most useful, he points out the objectionable features of the different batteries that have been in use. Bunsen's, a zinc-carbon battery, is objectionable from its size. The "Grove" requires too much trouble and care in working it; and, owing to the strong nitric acid required, "perplexing accidents are often unavoidable." At first he followed the opinion of authorities and used only batteries of constant current, but was soon led to abandon them, from his inability to heat wire "of such length and thickness as would insure against hæmorrhage in any but trifling operations," and because of the objection to the fumes of the large quantities of nitric acid used, the time required in filling, emptying, and cleansing the cells. Stohrer's was abandoned because of its huge dimensions. The Grenet, a single-fluid battery, though powerful and certain, has a limited sphere of action, owing to the lack of *intensity*. This battery gave the most satisfaction, but, as it did not meet every requisite, he had one constructed, similar in character, but still more powerful. This was a carbon-zinc battery with eight each of carbon and zinc plates. It was arranged to act as two cells when quantity, or four, when intensity was desired. Still even this was found too large and heavy.

Dr. Byrne declares that the constant quantity is *not* indispensable, and says, "it is no more an essential requisite in a battery for surgical purposes than would be perpetual motion in a timepiece."

After an extended experience with all the batteries in use, Dr. Byrne was able to produce one which combined all the advantages of these various instruments, yet was light and compact in form, and readily portable by the hand. "It consists of twelve carbons and twelve zincs, each three by five inches, combined and arranged so as to represent four sets or cells of three pairs each." This battery is "capable of heating (white) from six to eight inches of No. 16 wire (Stubb's gauge), or over twelve inches of No. 21." Minute directions for the management of this battery are given, together with a complete list and woodcuts of the various cauterizers in use.

A large part of the book is devoted to extracts from the doctor's clinical record, in which the uses and great advantages of electro-surgery are demonstrated. This portion of the book, too, is highly instructive, and shows that what the doctor claims for the method is not overdrawn.

In an appendix is given the description of a galvano-caustic battery, more compact even than the one above described. Being encouraged by unexpected results, he continued his "investigations, with the hope of obtaining great power within a still smaller compass." He was convinced that, in order to make the practice of galvano-cautery acceptable and attractive, an instrument must be constructed that would be of the smallest possible dimensions, and in which, for the sake of economy, every mechanical contrivance, not absolutely necessary, would be dispensed with. He found that he could obtain much greater thermal effect by representing, "for example, one hundred and twenty inches of surface, by a number of small plates (three by five) combined and connected together in a certain manner, than can possibly be produced by three hundred and seventy-eight inches, while elements four times the size are employed, the intensity arrangement being the same in both cases, and each battery consisting of two of these compound open cells, *immersed in one vessel*." The battery constructed on this plan surprises one by the extraordinary power it manifests. It is capable of bringing to a state of incandescence, almost instantly, large-sized platinum wire. This instrument was manufactured by George Tiemann & Co.

The author displays an accurate knowledge of electro-physics, and has made his book almost indispensable to one seeking reliable information regarding the management and uses of galvano-caustic batteries.

He enthusiastically predicts the great importance in which electro-cautery will be held in the future.

Art. III.—*Fifth Annual Report of the State Board of Health of Massachusetts.* 8vo, pp. xvi.–550. 1874.

No one can read the reports of the Boards of Health of Massachusetts without recognizing that something is being accomplished in the way of hygienic reform. Not the least interesting and important of these serials is the one at present under notice. It shows that the Board of Health of Massachusetts is quite effective, and that many physicians throughout the State are ready to lend assistance.

The first article, after the "General Report of the Board," is entitled "Preventive Medicine, and the Physician of the Future," by Henry I. Bowditch, M. D., chairman of the Board. As an article upon hygiene, although condensed, it is very valuable, and will repay perusal by all. He adopts the view advocated by Murchison and others, that fevers are often propagated by contaminated drinking-water and milk. Drinking-water may contain impurities sufficient to become one of the means of producing fevers; but, while we concede that *pure* milk is highly important to the well-being of those who drink it, we do not think it has been proved that it is liable to contain the special poison giving rise to typhoid fever.

The next paper is "On the Present Condition of Certain Rivers of Massachusetts, together with Considerations touching the Water-Supply of Towns," by Prof. Wm. R. Nichols. This is a very elaborate article, giving the results of the chemical examination of the waters of a number of the principal rivers which are the recipients of the sewage of cities, and conclusions respecting the propriety of using the same for sources of water-supply for towns located farther down the stream. Although, in many instances, but little difference is detected between the composition of the water above the sewers and that below, the use of such water, for towns lower down the stream, is reported adversely upon.

"*The Brighton Abattoir*" is the subject of the following article, comprising—1. "Report of Mr. Meriam;" 2. "Description of the Abattoir;" 3. "Letter from Mr. Schultz, describing European abattoirs in 1873." The Boards of

Health of Massachusetts have certainly accomplished a great work in effecting so perfect an arrangement for slaughtering.

The next article, entitled "The Health of the Farmers of Massachusetts," by J. F. A. Adams, M. D., of Pittsfield; "With a Letter on Some Farm-Houses, and Some Mistaken Ways of living in them," by Mrs. T. F. Plunkett, of Pittsfield, shows that farmers are the healthiest class of citizens in the State, and points out many ways whereby the health of that class might be enhanced, and their lives prolonged. The health of the wives of farmers is liable to suffer from their confinement and sameness of labor. Both parts of the article are very practical, the former portion being based largely upon the reports of many physicians throughout the State, made to the author.

Quite a lengthy "Report on the Epidemic of Cerebro-Spinal Meningitis in Massachusetts in 1873, with some Inquiry into the Circumstances attending its Origin or Supposed Cause," by J. Baxter Upham, M. D., comprises the next paper. The views expressed in this article are based, to a considerable extent, upon the reports of various physicians. The author concludes that "the *primal* origin of the disease is atmospheric, and, for the present, beyond our ken."

George Derby, M. D., Secretary of the Board, contributes an article on "Hospitals," in which he argues in favor of establishing hospitals on the cottage plan. The views of Simpson and Paget, which the author borrows largely from, are no doubt familiar to all.

An elaborate article, well written, and involving considerable research, by Edward Jarvis, M. D., of Dorchester, on the "Political Economy of Health," next follows. The author recommends government aid in securing proper hygienic regulations, deeming the health of the people as important as that of animals, or the advancement of agricultural science, which subjects receive public attention.

An excellent article on "School Hygiene," by Fred. K. Winsor, M. D., of Winchester, shows the necessity of reform in this department of science. Many of the author's conclusions are aided by the reports from doctors, teachers, and superintendents, in different parts of the State. He adopts the views of Dr. Clark[1] (in common, no doubt, with nearly all the profession), in opposition to the coeducation of the sexes after puberty.

"The Work of Local Boards of Health," by Azel Ames, Jr., M. D., of Wakefield, is an excellent article, setting forth many of the duties devolving upon boards of health.

W. E. Boardman, M. D., of Boston, contributes a paper "On the Use of Zincked or Galvanized Iron for the Storage and Conveyance of Drinking-Water," in which he states that it is proved that zinc is acted upon by drinking-water, the water containing undissolved oxide and carbonate, and dissolved salts of zinc; "that, probably, under no circumstances is the oxide or the carbonate an active or gradual poison, much less in the amounts in which they can occur under the conditions mentioned; that, at least with water fit for drinking purposes in other respects, the contained zinc-salts in solution do not exert any deleterious effects upon the human system; finally, that, even if all the zinc in solution were in the form of the chloride, which is known to be the most active poison of the zinc-salts, the amount would still be insufficient to endanger health" (p. 510). The board, however (p. 26), are not prepared to give a positive opinion that zincked iron is, under all circumstances, entirely harmless.

An article on the "Health of Towns" closes the volume.

We commend the "Report" to the *laity* for perusal, as well as the professional man, believing it will prove beneficial to all. We regret that nothing more substantial than a paper cover could be afforded.

ART. IV.—*Principles of Mental Physiology, with their Application to the Training and Discipline of the Mind, and the Study of its Morbid Conditions.* By WILLIAM B. CARPENTER, M. D., LL. D., etc., etc. New York: D. Appleton & Co., 1874.

IN this handsome volume of 722 pages, we have the outline on mental science which made the fourth and fifth editions of Dr. Carpenter's "Principles of Human Physiology" so attractive, *plus* a good deal of fresh matter. It does not claim to be a treatise on psychology. Its chief aim is to elucidate the share which the mind has in interpreting the phenomena of the external world, but more particularly in the production of subjective states having no immediate relation to matters of fact. After an introductory chapter on "The General Relations between Mind and Body," in which the author's theory of the autocracy of the will is developed, he passes in review "The Nervous System and its Functions," afterward taking up, *seriatim*, "Attention," "Sensation," "Perception and Instinct," "Ideation and Ideo-Motor Action," "Emotion," and "Habit." "Special Physiology" follows next in order, and leads to the consideration of sleep, dreams, somnambulism, trance, insanity, and the author's foster-theory, unconscious cerebration. This portion of the subject is treated of in a manner at once pleasing and instructive.

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[1] "Sex in Education."

The work is particularly serviceable on account of its bearing upon the moral element in man. The author takes the facts of human nature as he finds them, and, without attempting an analysis of their origin or character, shows, with great felicity of expression, how they are susceptible of modification in the interest of private and public morality.

We cordially recommend so practical a book, not to specialists alone, but to the public at large, and more especially to teachers and heads of families.

Art. V.—*Annual Report of the Supervising Surgeon of the Marine Hospitals of the United States, for the Fiscal Year* 1873—*July* 1, 1872, *to June* 30, 1873. By John M. Woodworth, M. D., Surgeon of the United States Marine Hospital Service. 8vo, pp. 155. Washington: Government Printing-Office, 1873.

This volume comprises—I. The general report of the "Operations of the United States Marine Hospital Service," 1873, by Dr. Woodworth; embracing many tables and statistics. II. An Appendix, consisting of—

A. Hospitals and Hospital Construction, by the same author, including several diagrams.

B. The Distribution and Natural History of Yellow Fever, as it has occurred at Different Times in the United States, by J. M. Toner, M. D. This article is somewhat elaborate, and shows the result of considerable labor in its production. It contains numerous tables, and a map.

C. The Yellow Fever Epidemic of 1873, by Dr. Woodworth. It is made up largely of communications from medical men (mostly officers of the United States Marine Hospital Service) to the author upon the subject.

D. An interesting "Case of Double Diaphragmatic Rupture and Hernia" (with a plate), by Thomas J. Minor, M. D., Surgeon United States Marine Hospital Service.

E. "Strictures of the Urethra," by C. N. Ellinwood, M. D., etc.

F. "The Sailor and the Service at the Port of New York," by Heber Smith, M. D., etc.

G. "Report on the River Boatmen on the Lower Mississippi," by Orsamus Smith, M. D., etc.

The "Report" is, on the whole, a valuable one, some of the articles being especially useful, on account of the statistics they contain.

Books and Pamphlets Received.—Proceedings of the Twentieth Annual Meeting of the Medical Society of the State of North Carolina, held at Statesville, May, 1873. Raleigh: Stone & Uzziel, 1873.

Inflammation of the Lungs: Tuberculosis and Consumption. Twelve Lectures. By Dr. Ludwig Buhl, Professor of Pathological Anatomy and General Pathology in the University of Munich, etc. Translated by permission by Matthew D. Mann, M. D., and Samuel St. John, M. D. New York: G. P. Putnam's Sons, 1874.

Materia Medica, for the Use of Students. By John B. Biddle, M. D., Professor of Materia Medica in the Jefferson Medical College, etc., etc. Sixth edition, revised and enlarged, with Illustrations. Philadelphia: Lindsay & Blakiston, 1874.

Anatomy of the Invertebrata. By C. Th. von Siebold. Translated from the German, with Additions and Notes, by Waldo J. Burnett, M. D. Boston: James Campbell, 1874.

Twenty-fifth Annual Announcement of the Woman's Medical College of Pennsylvania, Philadelphia. Session of 1874–'75. Philadelphia, 1874.

The Treatment of Uterine Flexions. By Ely Van de Warker, M. D., Syracuse, N. Y. From the *Buffalo Medical and Surgical Journal*, April, 1874. Buffalo, 1874.

Catalogue of the Officers and Students of the University of Georgia, Athens, Georgia, Seventy-third Year. 1874. Macon, Ga.: J. W. Burke & Co., 1874.

Transactions of the Epidemiological Society of London, vol. iii., part II. Sessions 1869 to 1873. London: Robert Hardwick, 1874.

Transactions of the Medical Association of Georgia, at its Twenty-fourth Annual Meeting, held in Atlanta, Ga., April 9–11, 1873.

Transactions of the New York Academy of Medicine. Instituted 1847. Second Series, vol. i. New York: D. Appleton & Co., 1874.

Rupture of the Perinæum: its Causes and Cure. By A. K. Gardner, M. D. New York, 1874.

Reports on the Progress of Medicine.

THEORY AND PRACTICE.

Quinine as a Remedy for Hay-Fever. By Prof. Binz, of Bonn. [Practitioner, April, 1874.]

From what I have observed of recent English publications on the subject of hay-fever, I am led to suppose that English authorities are inaccurately acquainted with the discovery of Prof. Helmholtz, as far back as 1868, of the existence of uncommon low organisms in the nasal secretions in this complaint, and of the possibility of arresting their action by the local employment of quinine. I therefore purpose to republish the letter in which he originally announced these facts to myself, and to add some further observations on this topic. The letter is as follows:

"I have suffered, as well as I can remember, since the year 1847, from the peculiar catarrh called by the English 'hay-fever,' the specialty of which consists in its attacking its victims regularly in the hay-season (myself between May 20th and the end of June), that it ceases in the cooler weather, but on the other hand quickly reaches a great intensity if the patients expose themselves to heat and sunshine. An extraordinarily violent sneezing then sets in, and a strongly corrosive thin discharge, with which much epithelium is thrown off. This increases, after a few hours, to a painful inflammation of the mucous membrane and of the outside of the nose, and excites fever, with severe headache and great depression, if the patient cannot withdraw himself from the heat and the sunshine. In a cool room, however, these symptoms vanish as quickly as they come on, and then there only remain for a few days a lessened discharge and soreness, as if caused by the loss of epithelium. I remark, by-the-way, that in all my other years I had very little tendency to catarrh or catching cold, while the hay-fever has never failed during the twenty-one years of which I have spoken, and has never attacked me earlier or later in the year than the times named. The condition is extremely troublesome, and increases, if one is obliged to be much exposed to the sun, to an excessively severe malady.

"The curious dependence of the disease on the season of the year suggested to me the thought that organisms might be the origin of the mischief. In examining the secretions I regularly found, in the last five years, certain vibrio-like bodies in it, which *at other times I could not observe* in my nasal secretion. . . . They are very small, and can only be recognized with the immersion-lens of a very good Hartnack's microscope. It is characteristic of the common isolated single-joints that they contain four nuclei in a row, of which two pairs are more closely united. The length of the joints is 0.004 millimetre. Upon the warm objective stage they move with moderate activity, partly in mere vibration, partly shooting backward and forward in the direction of their long axis; in lower temperatures they are very inactive. Occasionally one finds them arranged in rows upon each other, or in branching series. Observed some days in the moist chamber, they vegetated again, and appeared somewhat larger and more conspicuous than immediately after their excretion. It is to be noted that only that kind of secretion contains them which is expelled by violent sneezings; that which drops slowly does not contain any. They stick tenaciously enough in the lower cavities and recesses of the nose.

"When I saw your first notice respecting the poisonous action of quinine upon infusoria, I determined at once to make an experiment with that substance, thinking that these vibrionic bodies, even if they did not cause the whole illness, still could render it much more unpleasant through their movements and decompositions caused by them. For that reason I made a neutral solution of sulphate of quinine which did not contain much of the salt (1.800), but still was effective enough, and caused moderate irritation on the mucous membrane of the nose. I then lay flat on my back, keeping my head very low, and poured with a pipette about four cubic centimetres into both nostrils. Then I turned my head about in order to let the liquid flow in all directions.

"The desired effect was obtained immediately, and remained for some hours; I could expose myself to the sun without fits of sneezing and the other disagreeable symptoms coming on. It was sufficient to repeat the treatment three times a day, even under the most unfavorable circumstances, in order to keep myself quite free.[1] There were then no such vibrios in the secretion. If I only go out in the evening, it suffices to inject the quinine once a day, just before going. After continuing this treatment for some days the symptoms disappear completely, but if I leave off they return till toward the end of June.

"My first experiments with quinine date from the summer of 1867; this year (1868) I began at once as soon as the first traces of the illness appeared, and I have thus been able to stop its development completely.

"I have hesitated as yet in publishing the matter because I have found no other patient[2] on whom I could try the experiment. There is, it seems to me, no doubt, considering the extraordinary regularity in the recurrence and course of the illness, that quinine had here a most quick and decided effect. And this again makes my hypothesis very probable, that the vibrios, even if being no specific form, but a very frequent one, are at least the cause of the rapid increase of the symptoms in warm air, as heat excites them to lively action."

I should be very glad if the above lines would induce medical men in England—the haunt of hay-fever—to test the observation of Helmholtz. To most patients the application with the pipette may be too difficult or impossible; I have, therefore, already suggested the use of Weber's very simple but effective nose-douche. Also it will be advisable to apply the solution of quinine *tepid.* It can, further, not be repeated often enough that quinine is frequently adulterated, especially with cinchonia, the action of which is much less to be depended upon.

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[1] There is no foundation for the objection that syringing the nose could not cure the asthma which accompanies hay-fever; for this asthma is only the reflex arising from the irritation of the nose.—B.

[2] Helmholtz, now Professor of Physics at the University of Berlin, is, although M. D., not a medical practitioner.—B.

Dr. Frickhöfer, of Schwalbach, has communicated to me a second case in which hay-fever was cured by local application of quinine (Cf. Virchow's *Archiv* (1870), vol. li., p. 176). Prof. Busch, of Bonn, authorizes me to say that he succeeded in two cases of "catarrhus æstivus" by the same method: a third patient was obliged to abstain from the use of quinine, as it produced an unbearable irritation of the sensible nerves of the nose. In the autumn of 1872 Helmholtz told me that his fever was quite cured, and that in the mean time two other patients had, by his advice, tried this method, and with the same success.

Translations.

Aphthous Stomatitis communicated to Man through the Milk of a Cow affected with the Same Disease.—The symptoms commenced in less than half an hour after the ingestion of the milk. They consisted in vertigo, tingling in the ears, feebleness, afterward delirium and hallucinations. On the second day, vomiting and diarrhœa with abdominal pains set in, which promptly yielded to treatment by opium and subnitrate of bismuth. The fever, however, was not broken, and on the third day stomatitis appeared, with ptyalism, and the development of aphthæ on the inner surface of the lips and cheeks, on the palate, and the inferior surface and borders of the tongue. At the same time, there appeared a phlyctenular eruption on the hands, feet, perinæum, and scrotum. The nervous disturbances, delirium, and insomnia, were combated by opium, given in doses of fifteen centigrammes per diem, and the stomatitis by gargles of chlorate of potash. At the end of fifteen days, the patient recovered. A remarkable detail of this observation, made by Dr. Van Varys, is that the wife and children of the patient had drunk milk from the same cow, and were not affected. At that period, an epidemic of aphthous stomatitis reigned among the horned cattle in the country, and the milk of these animals was used, notwithstanding its virulent properties. The difference in the results Dr. Van Varys attributes to the fact that the milk drank by the patient's family had previously been boiled. Experiments made by a veterinary surgeon of Nievre have demonstrated that milk subjected to a temperature of more than 80° loses its virus. G. R. C.

Fibrous Strictures of the Rectum.—On this subject, A. Muron (*Gaz. Méd.*, No. 11, 1873) writes as follows: In the etiology of these stenoses, three general factors are enumerated—dysentery, blennorrhœa ani, and syphilis. The first two affections may undoubtedly be regarded as possible causes, especially since the occurrence of blennorrhœa recti, formerly denied, has now been proved by Rodet, Rollet, Tardieu, etc.; it holds, therefore, the same relation to strictures of the rectum as gonorrhœa does to strictures of the urethra. These stenoses are composed of a fibrous structure, in no way presenting the pathological features of syphilis, an evidence of their true nature being obtainable only when their earlier stages of development can be observed. Their analogues are found in the atrophy of the testicle, as described by Ricord, and in the cicatricial degeneration of the skin following gummy tumors. Phagedenic chancres are frequently observed, and Malassez describes a case in which mucous patches in the rectum were found coincident with similar affections on the anus and genitals. The strictures are more usually formed above the sphincter, about three to four centimetres distant from the anus, and, according to Muron, take their origin in mucous patches. In reply to the possible objection that syphilitic ulcers have been observed on the anus, but never on the sphincter, Muron offers the observation of Malassez, who has proved that the mucous membrane of the sphincter ani is free from glandular structure, that glands are found to begin immediately above, which explains the absence of the patches at the sphincter, for, according to Cornil and Ranvier, they are only developed where glands are present. E. F.

The Employment of Hot Wine in Certain Hæmorrhages.—Dr. Papillard publishes, in the *Bull. Méd. du Nord*, six cases of hæmorrhage, treated with hot wine, in large doses. Four metrorrhagias, due to various causes, one epistaxis, and a tuberculous hæmoptysis, yielded rapidly to this treatment. Dr. Papillard concludes that hot wine exerts its effect on the progress of the hæmorrhage in any organ in which it may take place, and he recommends the employment of this medium as a valuable resource.—*Rev. de Thérap. Méd. Chir.*, No. 20, 1873. G. R. C.

Aqua-Puncture in the Treatment of Neuralgia.—The apparatus consists of a pump-body, in which a piston is worked vertically, by means of a very powerful lever. The lower extremity dips into a reservoir, excavated into the foot of the apparatus, filled with distilled water. To the upper extremity is attached a flexible pewter tube, about fifty to sixty centimetres in length, which terminates in a copper tube, having in its centre a filiform canal. When the apparatus is worked, a small jet of water escapes from this extremity, with such force as to perforate a piece of leather of several millimetres' thickness, held at the distance of one centimetre. The piston is worked a few times, to get rid of the air which may be in the tubes, and then the free extremity is placed about one centimetre from the part where the aqua-puncture is to be made. A steady movement of the lever is to be made with one hand while the other holds the flexible tube in place until a white vesicle appears, corresponding to the point where the liquid strikes the skin. From one to four, eight, or ten punctures are to be made, according to the parts affected, and directly over the seat of pain. The skin around the vesicle is at first red, but, after a few hours, the vesicle and redness disappear, leaving only a small, black point, due to the crust formed by the drying up of a drop of blood in the puncture. At the moment of the operation an extremely acute pain is experienced, but the relief afforded is so great that patients are desirous of having the operation repeated if the disease returns. The author has had great success with this mode of treating neuralgias, but is unable to give the reasons for its efficacy. He has experienced but one accident with it, a severe but not fatal lymphangitis having been produced by an aqua-puncture made in the posterior part of the left leg (Dr. Siredey, in *Bull. de Thérapeutique*, vol. i., No. 10, 1873.) G. R. C.

Iodine Injections in Engorgements of the Tonsils.—By Dr. Rumbold. The author uses the following formula: iodine, grm. 0.14; iodide of potassium, 2.40; distilled water, 30. With this mixture, two injections during a week are made into the engorged tonsils. Every injection is followed by a slight local inflammation, which soon disappears. From twelve to eighteen injections are necessary to effect a cure. The efficacy of this treatment is combined with the advantage that it alters neither the substance nor the functions of the tonsils. M. Rumbold has employed it a great number of times, and always with success. E. F.

Extra-Uterine Pregnancy.—Dr. Leone Lefort presented to the Academy of Surgery, in the name of Dr. Gripponilleau, an extraordinary case of extra-uterine pregnancy.

The subject of this curious observation had presented fourteen years ago all the signs of pregnancy. The abdomen enlarged gradually, but parturition did not take place at the expected time. The abdomen gradually diminished in size, but still presented an abnormal development, which was attributed to the existence of an intra-abdominal tumor. Last December the patient was seized with severe abdominal pains, which terminated with the expulsion by the rectum of the bones of the skeleton of a fœtus.—(*Union Méd.*, January, 1874.) G. R. C.

Miscellany.

The American Medical Association.—The annual meeting of this Association took place in Detroit, June 2d, Dr. J. M. Lover, President, in the chair. After an appropriate welcome, by Dr. William Brodie, the President delivered his address, and the Society proceeded to business. We have not space for even a summary of the work done during the four days' session, but shall allude hereafter to its more important features.

The following report of the Committee on Nominations was adopted:

President, Dr. W. K. Bowling, Tennessee. *Vice-Presidents:* 1. Dr. William Brodie, of Michigan; 2. Dr. J. J. Woodward, of United States Army; 3. Dr. H. W. Brown, of Texas; 4. Dr. H. D. Didama, of New York. *Treasurer*, Dr. Caspar Wister, of Pennsylvania. *Librarian*, Dr. Wm. Lee, of District of Columbia. *Committee on Library*, Dr.

Johnson Elliott, of District of Columbia. *Assistant Secretary*, Dr. William Walling, of Kentucky.

Committee of Arrangements: Drs. Edward Richardson, Chairman; Lawrence Smith, Robert Gale, James Holland, Henry Bullitt, J. M. Keller, D. W. Yandell, Lewis Rogers, R. C. Hewett, all of Louisville.

Committee on Prize Essays: Drs. J. A. Octerlony, L. P. Yandell, J. D. Jackson, all of Kentucky; Theophilus Parvin, T. M. Stevens, both of Indiana.

Committee of Publication: Drs. F. G. Smith, Wm. B. Atkinson, D. Murray Cheston, Caspar Wister, Alfred Stillé, all of Pennsylvania; William Lee, of District of Columbia; H. F. Askew, of Delaware.

Next place of meeting, Louisville, Kentucky. Time, the first Tuesday in May, 1875.

The committee also reported the following nominations:

Chairmen and Secretaries of Sections for 1875: 1. Practice of Medicine, Materia Medica, and Physiology, Dr. Austin Flint, of New York, Chairman, and Dr. J. K. Bartlett, of Wisconsin, Secretary.

2. Obstetrics and Diseases of Women and Children, Dr. W. H. Byford, of Illinois, Chairman, and Dr. S. C. Bussey, of District of Columbia, Secretary.

3. Surgery and Anatomy, Dr. E. M. Moore, of Rochester, New York, Chairman, and Dr. Thomas S. Latimer, of Maryland, Secretary.

4. Medical Jurisprudence, Chemistry, and Psychology, Dr. Jerome Cochran, of Alabama, Chairman, and Dr. G. A. Moses, of Missouri, Secretary.

5. State Medicine and Public Hygiene, Dr. H. I. Bowditch, of Massachusetts, Chairman, and Dr. H. B. Baker, of Michigan, Secretary.

Judicial Council: Drs. J. K. Bartlett, Wisconsin; R. H. Gale, Kentucky; J. B. Johnson, Missouri; J. R. Bronson, Massachusetts; B. H. Catlin, Connecticut; Franklin Staples, Minnesota; W. T. Briggs, Tennessee, in place of the seven whose terms expire at this meeting. Dr. A. N. Talley, of South Carolina, for two years, to fill vacancy. The rest of the present Council continued.

State Medical Associations.—The Medical Society of the State of Pennsylvania met in Easton, May 13th, Dr. S. Kieffer, of Carlisle, President, in the chair. The following were the officers elected for the ensuing year:

President, Dr. Washington L. Atlee, of Philadelphia. *Vice-Presidents:* Drs. George D. Bruce, Pittsburg; Rowan Clarke, Antistown; P. B. Breinig, Bethlehem; Alexander Craig, Lancaster. *Corresponding Secretary*, Dr. R. J. Dunglison, Philadelphia. *Permanent Secretary*, Dr. W. B. Atkinson, Philadelphia. *Recording Secretary*, Dr. R. S. Chrisman, Pottsville. *Treasurer*, Dr. Benjamin Lee, Philadelphia.

The next meeting will be held in Pottsville, on the second Wednesday in June, 1875.

The eighth annual meeting of the Missouri State Medical Association was held in Sedalia, April 21st and 22d, and was largely attended. Dr. W. O. Torry, M. D., of Hannibal, was elected President for the ensuing year, and Jefferson City was chosen as the place of meeting for 1875.

The annual meeting of the Michigan State Medical Society was held in Coldwater, May 6th and 7th. Some important business was transacted, and many new members were admitted. Dr. R. C. Kedzie, of Lansing, was elected President for the ensuing year. The next meeting will be held in Detroit.

The twenty-first annual meeting of the Medical Society of North Carolina took place in Charlotte, May 21st, the President, Dr. W. A. B. Norcum, in the chair, the session lasting three days. Dr. Norcum, instead of delivering the stereotyped valedictory address, read a valuable and suggestive paper on "Hæmorrhagic Malarial Fever," with special reference to the hematuric form, taking occasion to enter an earnest protest against the antiphlogistic methods of treatment. After hearing several other interesting papers, and transacting the usual business, the Society adjourned to meet in Wilson, May 19, 1875. Dr. J. W. Jones, of Tarboro, was elected President for the ensuing year.

The annual meeting of the Massachusetts Medical Society, held last month, was eminently successful. Valuable essays and reviews were read and some unusual cases reported. Dr. Cotting was elected President for the ensuing year.

Appointments, Honors, etc.—Edmund R. Peaslee has been appointed Professor of Gynæcology in the Bellevue Hospital Medical College. Dr. D. Warren Brickell has resigned his professorship in the same college, and Prof. W. T. Lusk assumes the entire chair of Obstetrics and Diseases of Women and Children. Dr. Stephen Smith has been appointed Professor of Surgery in the Medical Department of the University of the City of New York. Dr. M. A. Pallen, of St. Louis, has accepted a professorship in the same college. Prof. T. B. Buchanan has resigned the chair of Anatomy in the University of Nashville, and is succeeded by Prof. T. O. Summers. Prof. Vichal has been transferred to the chair of Diseases of Women and Children, and Prof. Menees to that of Obstetrics in the same college, Dr. Thomas A. Atchison having been elected Professor of Materia Medica and Therapeutics. It is said that the Boylston Prize Committee have received no essays this year deemed worthy of the prize. Dr. Robert Amory has resigned the chair of Physiology in the Medical School of Maine. Dr. Brown-Séquard sailed for Europe in the Celtic, June 13th. Dr. W. B. Davis has been elected to the chair of Materia Medica in Miami Medical College, in place of Prof. E. B. Stevens, who has removed to Syracuse, New York.

Dr. F. Riegel, of Würzburg, has accepted the position of Director of the Medical Department in the City Hospital in Cologne. It has been determined to erect, in the court-yard and Veterinary School of Alfort, a statue of Claude Bourgelat, the founder of veterinary teaching in France. A chair of Anatomy and Physiology has been established in the University of Otago, New Zealand, with a salary of $3,000, besides fees. Prof. Ziemssen, of Erlangen, has been invited to Munich to occupy the chair of Clinical Medicine made vacant by the death of Dr. Von Lindwurm. Prof. Leube, of Jena, will probably succeed Ziemssen at Erlangen; and Dr. Senator, of Berlin, fill Leube's place. The subscription fund in aid of the family of the late Dr. Webb, editor of the *Medical Times and Gazette*, already amounts to about $10,000. Lady Smith, living in Lowestoft, England, widow of the late Sir Edward Smith, President of the Linnæan Society, reached the age of 101, May 11, 1874.

Convention of Ex-Confederate Surgeons.—This Association was organized and held its first meeting in Atlanta, Georgia, May 20, 1874, Dr. S. H. Stout occupying the chair. After some preliminary remarks, the following were elected permanent officers of the Association: Dr. S. P. Moore, of Richmond, President; Dr. Henry F. Campbell, of Georgia, Vice-President at large; District Vice-Presidents: Dr. James E. Claggett, of Maryland; Dr. Hunter McGuire, of Virginia; Dr. S. S. Satchwell, of North Carolina; Dr. W. F. Westmoreland, of Georgia; Dr. P. A. Holt, of Florida; Dr. C. J. Clark, of Alabama; Dr. S. V. D. Hill, of Mississippi; Dr. E. S. Drew, of Louisiana; Dr. J. N. Hayden, of Texas; Dr. Paul F. Eve, of Tennessee; Dr. D. A. Linthicum, of Arkansas; Dr. D. W. Yandell, of Kentucky; and Dr. L. T. Pim, of Missouri.

Standing committees were appointed on hospital service, necrology, miscellaneous medicine, and hygiene.

On motion of Dr. Battey, a committee of five was appointed to prepare and submit to the next meeting of the Association a form of permanent constitution and by-laws for its government. The chair appointed Drs. Battey, Cumming, Logan, Miller, and Newton.

On motion of Dr. W. F. Westmoreland, it was resolved, that a committee of three be appointed to confer with the Surgeon-General U. S. A. in reference to the captured archives of the Medical Department of the late Confederate States, as to the extent to which they may be used by the Association, and all other matters pertaining to the publication of the same, and report the result of the conference at the next meeting.

After the transaction of some other business, chiefly relating to the collection and preservation of medical records of the late war, the Association adjourned, to meet in Richmond, Virginia, on the first Wednesday in July, 1875.

Deaths from Chloroform.—The *British Medical Journal*, of April 11th, mentions a death from chloroform the previous week at the University College Hospital. A tumor in the parotid region was about to be explored with the aspirator, but the patient died during the administration of the anæsthetic. The same journal, of April 18th, records another death which occurred in St. Mark's Hospital, April 13th. The patient was a seaman forty-eight years of age, on whom an operation for fistula *in ano* was to be performed. Not more than one drachm of chloroform had been administered, when the pulse suddenly stopped. The breathing continued feebly for a few seconds later, when the man died. The same patient had taken chloroform twice before. A young man died May 19th, in the Good Samaritan Hospital, Cincinnati, while under the influence of chloroform, during an operation on the lower jaw.

New York Dermatological Society.—At the fifty-seventh regular, and sixth annual meeting of this Society, May 12, 1874, the following officers were elected for the ensuing year: *President*, R. W. Taylor. *Recording and Corresponding Secretary*, L. Duncan Bulkley. *Treasurer*, F. L. Satterlee. *Executive Committee*, F. P. Foster, E. L. Keyes; F. R. Sturgis, President and Secretary *ex-officio*. Dr. Bazin, of Paris, was elected honorary member, and Dr. Oscar Simon, of Berlin, corresponding member.

An Improvement in the Elastic Ligature.—Mr. Callender, of London, has devised a cutting instrument which he calls a "sarcotome," to act on the principle of the elastic ligature. It consists of a steel spring, to which a thread or wire ligature of any desired kind or size can be readily attached. The degree of tension on the ligature can be regulated and made uniform by a screw bearing on the spring.

Cocculus Indicus.—According to the *London Pharmaceutical Journal*, there is at present about twelve thousand pounds of this drug in the London market; there is no legitimate use for it, and, unless the brewers can throw light on the subject, it is difficult to account for so large a traffic in poison. It would appear to be a proper question for the health authorities to decide.

The British Medical Association.—The forty-second annual meeting of this body will be held in Norwich, August 11th, and the three days following, under the presidency of Sir William Fergusson. Dr. J. Russell Reynolds will deliver the address on Medicine, and Dr. Matthews Duncan that on Obstetrics.

The International Medical Congress.—This body will meet in Brussels, September 19, 1875. The Committee of Arrangements consists of MM. Vlemincks, Deroubaix, Bellefroid, Crocq, and Warlomont.

Medical Practice for Sale.—Attention is directed to a notice in our advertising columns, of a valuable practice for sale, with house, grounds, etc., in a flourishing city of New England.

Medical Registration Law of Missouri.—The following is a synopsis of the present law regulating the practice of medicine in Missouri, as published in the *St. Louis Medical and Surgical Journal:*

1. It is made unlawful for any person to practise medicine or surgery in this State, who shall not have first received the degree of doctor of medicine from some medical college or university duly established under and by virtue of the laws of the State or county in which the same is situated.

2. Every person wishing to commence the practice of medicine or surgery in this State is required to file a copy of his diploma in the office of the county clerk of the county in which he resides, to be sworn to and subscribed by the party filing the same, and thereupon the county clerk registers the diploma, for which a fee must be paid.

3. Persons practising, or who shall commence to practise, before the 1st of September, 1874, shall register without diplomas.

4. The penalty for non-compliance with the act, upon conviction, is fixed at not less than twenty-five nor more than five hundred dollars; and the fact that such person has not filed his diploma is a sufficient defense in any action which he may bring to recover his fees for professional services.

Priority in Aspiration.—The *Medical Times and Gazette*, in the course of a sketch of the various uses to which the aspirator may be applied, gives the following credit to an American surgeon: "Probably the first to successfully use a syringe for tapping collections of matter was Dr. Bowditch, of Boston, and he was thereby enabled to convert a very fatal malady—perinephritic abscess—into one easy of relief. But undoubtedly it is to Dr. Dieulafoy, of Paris, that we are mainly indebted for developing the method, which he has done with a skill and boldness meriting the highest praise; all the more so, inasmuch as he seems to have been ignorant of much that had been done before him."

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from May 14, 1874 *to June* 13, 1874.

Baily, E. J., Surgeon.—Assigned to duty as Medical Director of this Department. G. O. 7, Department of the Columbia, May 20, 1874.

Cooper, George S., Surgeon.—Relieved from duty as Medical Director, and to report to the commanding general, Department of California. G. O. 7, C. S., Department of the Columbia.

Bill, J. H., Surgeon.—Relieved from duty at David's Island, N. Y. H., and assigned to duty as Post Surgeon at Fort Wood, N. Y. H. S. O. 94, Military Division of the Atlantic, May 9, 1874.

Wright, Joseph P., Surgeon.—Granted leave of absence for thirty days. S. O. 129, A. G. O., June 11, 1874.

Fryer, B. E., Surgeon.—Relieved from duty at Fort Wood, N. Y. H., and assigned to duty at Fort Wadsworth, N. Y. H. S. O. 94, C. S., Military Division of the Atlantic.

Town, F. L., Surgeon.—To proceed to Fort Sill, Ind. Ty., and, on arrival, report by letter to the commanding general, Department of Texas, for assignment to duty; so much of S. O. 96, C. S., A. G. O., as directs him to report in person, having been revoked. S. O. 105, A. G. O., May 13, 1874.

Tilton, H. R., Assistant Surgeon.—Assigned to duty at Fort Sully, D. T. S. O. 94, Department of Dakota, May 12, 1874.

Williams, J. W., Assistant Surgeon.—To report to Lieutenant-Colonel G. A. Custer, Seventh Cavalry, for duty with Black Hills Expedition. S. O. 111, Department of Dakota, June 1, 1874.

Middleton, P., Assistant Surgeon.—Assigned to duty at Fort Duncan, Texas. S. O. 72, Department of Texas, May 12, 1874.

Lauderdale, J. V., Assistant Surgeon. — Assigned to temporary duty at Fort Adams, R. I. S. O. 116, Military Division of the Atlantic, June 12, 1874.

Steinmetz, William R., Assistant Surgeon. — Granted leave of absence for three months. S. O. 120, A. G. O., June 1, 1874.

Ghiselin, J. T., Surgeon.—Resigned June 6, 1874.

Holden, Levi, Surgeon (retired).—Died at Vineland, N. J., May 12, 1874.

Obituary.

Dr. H. M. Sprague, of Fordham, Westchester County, N. Y., died suddenly, May 30th. He was attacked with symptoms of uræmic poisoning, while on his way to make a professional call, the day before his death. He had been previously in his usual health.

Dr. Frederick Bird, Obstetric Physician to the Westminster Hospital, London, died April 28th, aged fifty-six years. He was one of the earliest ovariotomists, his first operation having been performed successfully, June 26, 1843.

Prof. Eugen Schneider, of Munich, died in that city on the 9th of April. He was born in 1796, and occupied the chair of Anatomy in the University of Munich from 1826 to 1854.

Dr. William Vesalius Pettigrew, an accomplished teacher and practitioner of medicine, of London, died May 13th, aged fifty-eight years.

Dr. Alexander C. Donaldson, a prominent physician of Sacramento, California, died in that city, March 22, 1874, aged seventy-three years.

The death is announced of Dr. George Mendenhall, of Cincinnati, President of the American Medical Association in 1870.

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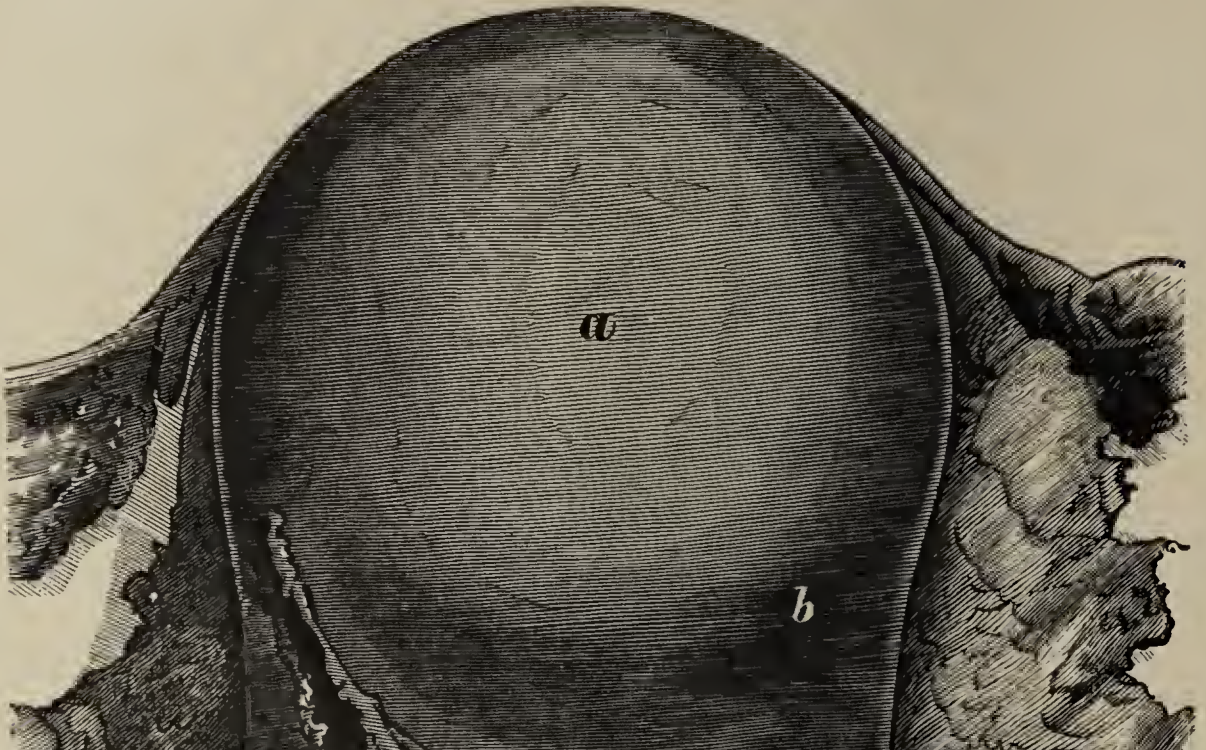

Dr. Lusk's Case of Rupture of Uterus.

a, Body of uterus.
b, Junction of body and os internum.
c, Thrombus, shining through peritonæum, the lower border of which was found to correspond with the site of the os externum.

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Original Communications.

Art. I.—*Treatment of Fractures of the Femur by Immovable Apparatus, and especially by Plaster of Paris in the Form of a Continuous Roller.* By Frank H. Hamilton, M. D., Professor of Practice of Surgery in Bellevue Hospital Medical College.

The proper treatment of broken bones is still an open question; for, while there seems to be a concurrence of opinion and a final settlement of practice upon a few points, upon many points opinions and practice continue to differ. At the present moment, the value of plaster-of-Paris dressings is especially under discussion; and, although most surgeons cannot be said to have taken sides in the matter, they are not all equally assured and sanguine as to its merits. More particularly does this difference of opinion exist in reference to the treatment of broken femurs by the continuous plaster roller—known generally as Mathiesen's method.

The *apparatus immobile*, in one form or another, dates from a very early period, but M. Seutin first secured for it the general confidence of the profession, when, in 1834, he published the results of his experience with starch-bandages. In 1837, M. Velpeau substituted dextrine for starch; and, still later, surgeons learned to use simple flour-paste.

During the eighteen or twenty years immediately following the publications of M. Seutin, the immovable apparatus in the form of starch, flour-paste, or dextrine, enjoyed a considerable reputation in all parts of the world. To speak of what I myself observed in this country, it is quite certain that it had a fair trial, and made a good many friends, both in private and hospital practice; but it had already begun to decline in public favor, when, in 1852, Mathiesen, a Dutch surgeon, suggested plaster of Paris as a substitute for starch and dextrine, to be employed, also, in the form of a continuous roller; the dry plaster to be incorporated with the bandages before application, precisely as is now done at Bellevue Hospital. In 1854, Pirogoff, surgeon-in-chief of the Russian armies, called attention to plaster of Paris, but his method differed in some respects from Mathiesen's. In this country, Isidor Gluck contributed a paper on the use of plaster to the *American Medical Monthly* for December, 1855; and Weber described its use in the *New York Journal of Medicine* for 1856. In 1861 a description was given in the *American Medical Times* of a new method introduced by Dr. James L. Little into the New York City Hospital (*see*, also, Dr. Little's paper, *New York Medical Record*, November 1, 1873). None of these gentlemen, however, followed the practice of the Dutch surgeon, their intention being, as implied or explicitly stated, to avoid the dangers incident to a completely closed and continuous bandage. In 1855, Mr. Hunt, of Birmingham, published a paper in which he declared that with plaster of Paris he always made perfect limbs; and Gamgee, of London, gave it his strong indorsement in 1856.

The reason why any doctrine or practice declines in public favor is not always apparent; nor is it entirely certain why the immovable apparatus, in the form suggested and popularized by Seutin, was, twenty years later, falling into disuse, if not into actual disrepute; but, in my opinion, it was on account of the pretty frequent and sometimes serious accidents which had resulted from its use, such as gangrene, ulceration, delayed union, and deformity; not a few of which had to be finally settled in the courts. The medical journals of those days abound in examples of these disasters, to some of which

I have referred in my "Treatise on Fractures and Dislocations." The same accidents were happening from Seutin's dressings, as had happened, over and over again, from the "primary roller," placed underneath the splints by nearly all the earlier surgeons. These accidents with the primary roller had been found to be insidious, sudden, and often terrible, and the same thing must of necessity happen, and did happen, occasionally, with Seutin's dressing.

The period was, therefore, unfortunate for the introduction of plaster of Paris, and especially for Mathiesen's method, which was at once recognized as only a new form of the method just laid aside. No discrimination was made between the various modes of using plaster, but they were all alike, including even the excellent improvements of Little, neglected or promptly condemned. Not even the great name of Pirogoff, or the remarkable success of Hunt, of Birmingham, or of Gamgee, of London, was sufficient to induce most surgeons to give plaster even a trial.

Twenty years more have passed, during which time a new generation has arisen, a generation of able and working men, but with no prejudices of experience to overcome; to whom the "primary roller" and Seutin's "apparatus immobile" convey no apprehensions of danger; and plaster, even in the form in which other immovable dressings had proved most fruitful of accidents, is readily accepted.

The June number of this JOURNAL for 1871 contains a very able article from Prof. Henry B. Sands, in which were reported, from Bellevue, twenty-one cases of fracture of the femur treated by Mathiesen's method, in eight of which there was no shortening; the maximum shortening being one inch. Dr. Joseph D. Bryant, late house-surgeon at Bellevue, has published in the *Medical Record*, September 15, 1871, twenty-three cases, of which thirteen are not shortened; and Dr. Samuel H. St. Johns, in the *American Journal of Medical Science* for July, 1872, has recorded fifty cases, with an average shortening of one-third of an inch, and, of the whole number, eighteen united without any shortening.

None of these gentlemen have met with any serious accidents, if I except one perineal slough.

All of these gentlemen are well known to the medical profession as men of integrity, experience, and eminent scholarship; and their opinions necessarily carry great weight.

I wish now to make a similar contribution to the history of the subject in question; and I may premise that the results will not be found equally satisfactory. I shall not attempt to explain the grounds for this difference, further than to suggest that it is quite probable that all of the cases were not measured, or even seen, by the gentlemen who made the reports above referred to. Neither of the gentlemen affirms that he has himself examined and measured all of the cases reported, and it seems proper to infer that this important element of a reliable statement of results was left to other and less experienced persons.

My own method of examining cases is as follows: There has been no selection (except when I came to report examples of accidents). Every case which has come under my observation, and which I have been permitted to examine, is reported, whether treated by myself or by others, and no others are reported. I have seen many more than I shall report; but at Bellevue we change service every two months, and it is therefore exceedingly difficult to follow cases to their termination; indeed, this seldom happens with my own cases, so that it will be found that most of the cases reported were treated by my colleagues; but this will not diminish their value as testimony. Moreover, I have, in every instance, at Bellevue, required one of the house-surgeons—in most cases the one who dressed the limb—to measure the limb in my presence, and correct or confirm my measurement, and the result as recorded is in accordance with our mutual agreement. Cases drawn from other hospitals are attested in the same manner, or, if possible, by some competent medical man. It is well known that all surgeons are not alike careful in measuring limbs; and my experience teaches me that it is not safe to trust always to the measurements of others. I will not permit my readers to accept of my testimony unsupported.

Finally, I shall report, in a similar manner, cases treated by other methods. Possibly I may hereafter speak of fractures of other bones, treated by certain new methods, and for which even greater success is claimed by their inventors.

There are two purposes which I seek to attain in these detailed reports of cases. *First*, as has already been intimated, to enable us to form an intelligent opinion of the actual and relative value of the plaster-of-Paris dressing as practised at Bellevue; and, *second*, to determine what amount of shortening and deformity generally results from the treatment of fractures, at the present day, in the hands of our most experienced city surgeons.

Many years ago there was a pretty general opinion among surgeons, and an almost universal opinion among the people, that in skillful hands all fractures could be made to unite without deformity or shortening. Nearly all the standard teachers either directly taught the same, or left us to infer that such was the fact. The consequence was that, in nearly every case of failure to accomplish a perfect result, the surgeon was held responsible, and prosecutions for malpractice in the treatment of fractures became so common that few dared practise this branch of surgery. At one time there was scarcely a respectable surgeon in this country who had not been prosecuted one or more times. Many surgeons now living will confirm this statement, and will sustain me in saying that the condition of matters was alarming, and threatened to drive all respectable men from our ranks.

Stimulated by a desire to arrive at the truth, and to save my professional brethren from unjust prosecutions, I published in the *Buffalo Medical Journal* for April, 1849, a paper entitled "Fracture Tables;" and again, in 1853, Dr. Boardman prepared, from my notes, additional cases, comprising in all four hundred and sixty-one cases, drawn from the Buffalo, New York, Philadelphia, and other hospitals, all of which had been carefully examined by myself. In the "Transactions of the American Medical Association for 1855, 1856, and 1857," are published more than six hundred cases in detail, obtained by myself in the same careful manner. The results were by no means such as had been claimed; but the testimony of others soon came, in abundance, to sustain me. In a few years surgeons ceased to be prosecuted, and the courts were no longer the means by which surgeons were ruined pecuniarily and professionally.

At the risk of being charged with personal vanity, I have related these facts in the history of American surgery, because they alone will fully explain my interest and zeal in the matter.

At length, however, as it appears to me, the old dangers are returning, and may well begin to cause alarm. In the case of nearly all fractures an entirely new or more or less modified practice has been suggested, and to a certain extent adopted, and for which, very naturally, improved results are claimed. Some are again beginning to affirm that, with their improvements, no failures occur—that the limbs are all straight, and of the same length as before they were broken.

That improvements have been made, I have no doubt, and that, with our present knowledge and appliances, we can obtain better results than were obtained twenty or thirty years ago, may be easily proven; but I have good grounds for believing that the value of many of these improvements is overrated, and that some of the new methods are inferior to the old. This is, then, one of the points which it is the purpose of this paper to consider, by a careful record of examples in which the new and modified methods have been employed. If some one does not undertake to do this faithfully, it will happen that a surgeon, having adopted any of the new modes of procedure, and having failed to make a perfect limb, will be held chargeable with a lack of skill or of attention; and so also, if he has ventured to employ any of the less recent plans and has failed, his failure will be justly attributed to his lack of judgment in the selection of a method. Probably the same thing will have to be done as often as once in twenty-five years, in the future, if surgeons intend to continue the practice of this unremunerative and dangerous department of our art. The service I have undertaken is not an agreeable one, since it necessarily opens the question whether the sanguine hopes of my brethren are in all respects justifiable; but it is a duty which I shall not hesitate to perform to the extent of my ability and means.

CASES TREATED BY MATHIESEN'S METHOD—EIGHTEEN YEARS OLD AND UNDER.

1.—*Simple Fracture of Femur; Middle; united with a Slight Bend, and shortened Three-quarters of an Inch.*

Gustave Blendow, aged eleven years, fell August 11, 1873, from a cart and was struck by a passing street-car, breaking the left femur near its middle. He was admitted on the same day to Ward 15, Bellevue. On the third day he was put under the influence of ether, pulleys were applied, and the limb dressed with plaster-of-Paris bandages, by the house-surgeon. The plaster-dressings extended from above the ankle to the body, including the pelvis. He left his bed two or three days later, and went about the ward on crutches.

September 23d.—The dressings have been removed for several days. I examined the limb with the house-surgeon, and we found it shortened three-quarters of an inch, and slightly bent at the seat of fracture. Passive anchylosis existed at the knee-joint, allowing flexion and extension only to the extent of about fifteen degrees.

2.—*Fracture of Femur, complicated with other Fractures. Shortened One Inch.*

Thomas Dobbins, aged twelve years, was run over by a street-car August 29, 1873, the car traversing, as he thinks, both legs, and breaking both legs below the knees. The right femur was broken at the same time a little below the trochanters: this latter fracture being caused, he states, by the kick of the horse. On the following day Dr. Early (Reception Hospital) applied a plaster-of-Paris dressing to the right leg and thigh, including the foot and pelvis.

October 2d.—The dressing was removed, and the thigh was found united, with a shortening of one inch, and a very-prominent angular curvature outward at the point of fracture. There was no shortening of the leg.

3.—*Fracture of Femur just below the Trochanter Minor; shortened Five-eighths of an Inch.*

Hugh Mooney, aged sixteen years, fell upon his side December 29, 1871, breaking his right femur a little below the trochanter minor. He was admitted to Bellevue, Ward 11, December 29th, service of Dr. James R. Wood. During the first ten days extension was made with pulley and weight. On the tenth day plaster-of-Paris bandages were applied by the house-surgeon, from the toes to the loins, including the pelvis. Two weeks after the application of the plaster he was found to have varioloid, and was sent to the Small-Pox Hospital on Blackwell's Island. The attack was not severe, and has left no marks. Two weeks later the plaster was removed.

March 11, 1872.—The limb was examined by Dr. Mitchell (of the house staff) and myself, and found to be straight, but shortened five-eighths of an inch.

4.—*Fracture of Shaft of Femur; Plaster-of-Paris Dressing and Buck's Extension; shortened Five-eighths of an Inch; straight.*

Paul Munk, aged fifteen years, admitted to St. Francis's Hospital, February 7, 1874, with a fracture of the femur at the junction of the upper and middle thirds. The accident had just occurred. Dr. Sharlau, surgeon to St. Francis's Hospital, made extension with adhesive plaster and about eight pounds weight, and counter-extension with a jacket made fast to the chest, from which straps were passed to the head-board. On the fifteenth day, a plaster-of-Paris splint was applied, extending from the loins to near the ankle, and extension maintained by adhesive plaster from foot, and eight pounds weight.

March 9th.—The dressings being removed I found the femur united, with a shortening of five-eighths of an inch. Limb straight. Verified by Drs. Sharlau and Rose. Dismissed March 26th.

5.—*Fracture of Femur near the Middle; simple; Plaster of Paris; shortened One and a half Inch; does not limp.*

Patrick J. Kinneary, aged sixteen years, fractured left femur near the middle, by the fall of an elevator, January 31, 1874. Taken immediately to Park Hospital, and placed in a fracture-box. February 4th, plaster of Paris was applied by Dr. Fluhrer, with ether and pulleys, including pelvis and foot. Sent home February 11th, and soon after began to walk about on crutches. Dressings removed at the hospital six weeks after it had been applied, not having been opened or disturbed during that time.

January 3, 1874.—Examined by Dr. William Arnold and myself. Patient walks without any limp; the limb is perfectly straight. Very little stiffness at knee-joint. It is shortened one and a half inch.

6.—*Simple Fracture of Femur, near its Middle, in a Boy, Seventeen Years old; Plaster-of-Paris Dressing; Union, with Deformity; One Inch Shortening, and Anchylosis of Knee.*

August Klein, aged seventeen years, was admitted to the Ninety-ninth Street Reception Hospital, November 3, 1873, having on the same day fallen from a scaffolding a height of thirty feet, breaking his left femur near its middle. No wound of the soft parts. Dr. Delgado, the house-surgeon, applied at once a roller and made extension by Buck's method.

November 4th.—Patient under influence of ether, and extension made by pulleys, plaster of Paris was applied by Dr. Delgado from above the ankle to the loins, including the pelvis. On the same day the patient was permitted to leave his bed.

10*th.*—The plaster having cracked, it was removed, and a new dressing applied in the same manner as before, with ether and pulleys.

CASES OF FRACTURE OF FEMUR TREATED WITH PLASTER OF PARIS, AND EXAMINED BY MYSELF (18 YEARS OLD AND UNDER).

Name.	Age.	Date of accident.	Characters.	Point.	Surgeon.	Treatment.	Result.	Remarks.
1. Gustavus Blendow.	11	Aug. 11, 1873.	Simple.	Middle.	Ward 15, Bellevue.	Plaster, ether, pulleys. Did not include the foot.	Short. $\frac{3}{4}$ in.; *some def'mity*; anchy's of knee.	
2. Thomas Dobbins	12	Aug. 29, 1873.	C'mplic'd with frac. of both legs below knees.	Just below trochanters.	Park Hosp.	Next day, plaster, including pelvis and foot.	1 inch, and *much deformity.*	
3. Hugh Mooney..	16	Dec. 29, 1871.	Simple.	Just below trochanters.	Ward 11, Bellevue. Dr. Wood.	Buck's exten. at first. Plaster fr. loins to toes on tenth day; two days later sent to Small-pox Hospital with varioloid.	Short. $\frac{5}{8}$ inch; straight.	
4. Paul Munk.....	15	Feb. 7, 1874.	Simple.	Middle.	Sharlau and Hamilton.	Extension at first, with 8 lbs. 15th day, plaster and extension; did not include pelvis or foot.	Short. $\frac{5}{8}$ inch; straight.	*Mixed* tr'm't.
5. Pat'k Kinneary.	16	Jan. 31, 1874.	Simple.	Middle.	Dr. Fluhrer, Park Recep. Hosp.	Fracture-box 4 days, then plaster, ether, and pulleys, including pelvis and foot.	Short. $1\frac{1}{2}$ inch; straight.	Does not limp.
6. August Klein...	17	Nov. 3, 1873.	Simple.	Middle.	99th St. Recep. Hosp.	Buck's exten. at first. Next day plaster, includ'g pelvis, but not foot; ether and pulleys. Nov. 10, plaster having broken, was removed, and a new splint applied, with ether and pulleys. Nov. 17, went home; Dec. 23, dressings removed.	1 inch, and *great deformity*, by outward bending at point of fracture; complete *anchylosis of knee.*	Dec. 24th, under ether, anchylosis broken up.

2 short $\frac{5}{8}$ inch.
1 " $\frac{3}{4}$ "
2 " 1 "
1 " $1\frac{1}{2}$ "

6 cases—least short., $\frac{5}{8}$ inch,
greatest short., $1\frac{1}{2}$ inch.

Deformity in 3 cases,
Anchylosis in 2 " of which 1 required anæsthetics, etc.

18*th.*—At request of his brother, the patient was permitted to go home, but with instructions that he should return once a week to the dispensary. He did not, however, return until December 24th, seven weeks and three days after the accident occurred. He had himself removed the splint on the 23d of December. The plaster had then been on the limb seven weeks. On readmission he was found to have complete anchylosis at the knee-joint. December 27th Dr. Delgado placed him under the influence of ether, and broke up the anchylosis. I saw him on the afternoon of the same day. The femur was united, with a shortening of one inch, and with a great deformity caused by an outward inclination of the bone at the point of fracture.

OVER EIGHTEEN YEARS.

1.—*Fracture of Shaft of Femur; simple; Plaster-of-Paris Dressing; shortened Three-quarters of an Inch.*

Michael Reidy, aged twenty-six years (resides at No. 457 Greenwich Street corner of Desbrosses Street); fractured right femur near its middle, January 10, 1874, by a barrel of sugar. Taken immediately to Park Hospital. Same night Buck's extension was applied. January 20th, plaster of Paris was applied by Dr. Fluhrer, extending from loins to toes, with aid of pulley and ether. February 14th, he left the hospital, and only returned to have the splint removed. Began to use crutches four or five days later. Dressings kept on six weeks. The hospital-books contain no record of measurement. I measured the limb June 1, 1874; shortened three-fourths of an inch; straight; motions of joint nearly restored. Limps very little.

2.—*Fracture of Shaft of Femur; simple; Plaster of Paris; shortened One and a Quarter Inch.*

Michael Mullaney, No. 69 Madison Street, aged twenty-four years, fractured left femur, near the middle, September 9, 1873, by the fall of a millstone upon it. Taken immediately to the Park Hospital. Buck's extension applied same day. September 13th, plaster of Paris was applied by Dr. Early, with aid of ether and pulleys, from loins to ankle. Did not leave the bed, and on the 29th of September the splint was removed and reapplied by Dr. Fluhrer, with ether and pulleys, dressings including hips and foot. Dr. Fluhrer assured him that he had pulled it down to its full length. This splint remained on the limb twenty-four days, without being disturbed, during which time patient was removed to Bellevue, and walked about on crutches. Removed by Dr. Figaro, Ward 7, Bellevue. Dr. Early informs me that it is recorded in his note-book, copied from Dr. Fluhrer's, as shortened half an inch. I find it, Januaury 1, 1874, shortened one and a quarter inch. Dr. W. S. Wells confirms this measurement.

3.—*Fracture of Shaft of Femur; Plaster of Paris; shortened Five-eighths of an Inch.*

Alexander Fraser, aged forty years, No. 6 James Slip, fractured right femur just above the knee, January 7, 1874, by slipping on an orange-peel on the sidewalk. Taken directly to the Park Reception Hospital. Buck's extension applied. January 10th plaster of Paris applied, with ether and pulleys, by Dr. Early, Dr. Fluhrer assisting. Dressings included foot and hips. Began to walk on crutches on the 14th of January. Dressings removed at the end of six weeks, February 22d. The hospital records furnish no statement of measurement, but Dr. Early's notes, copied from Dr. Fluhrer's private records, mention a shortening of one-eighth of an inch. June 1, 1874, Lewis Murphy, a mechanic, in my presence makes the measurement, and finds a shortening of five-eighths of an inch. I find it shortened five-eighths of an inch.

4.—*Fracture of Shaft of Femur; simple; Plaster of Paris; shortened One Inch.*

J. P. Lendberg, No. 436½ East Fifth Street, aged twenty-five years, fractured right femur, February 20, 1874, by a fall from a step-ladder. Fracture near the middle, and simple. Taken immediately to Park Reception Hospital. Buck's extension applied on the third day. February 26th, Dr. ——, one of the house-surgeons, applied plaster of Paris, with aid of pulleys and anæsthetic. Plaster extended from loins to toes. About ten days after dressings were applied he began to walk on crutches. Dressings removed at the end of seven weeks (eight weeks after the accident was received). June 1, 1874, shortened one inch. Measurement made by myself and Dr. W. S. Wells.

5.—*Fracture of Shaft of Femur; simple; shortened One and One-eighth of an Inch.*

Eugene B. Johnson, aged thirty years, fell from a scaffold, thirty feet, July 2, 1873, and was on the same day admitted to the Park Reception Hospital. He was found to have a fracture of the right femur a little below its middle. No wound of thigh. He had also a fracture of the left radius.—(Colles.) Dr. W. F. Fluhrer, the house-surgeon, employed extension by means of a weight and pulley, until July 12th. During this time no side-splints were in use, and the limb rested upon the bed, with the toes everted.

July 12th.—The patient being under the influence of ether, extension was made with compound pulleys, and a plaster-of-Paris bandage was applied by the senior assistant, under direction of Dr. Fluhrer, from the toes to the loins, including the pelvis.

20*th.*—Patient having complained a good deal of pains in his leg, especially about the ankle, the splint was cut in several places to relieve the pressure; at the same time the splint was observed to be quite loose about the pelvis and thigh.

31*st.*—Dr. Fluhrer removed the splint entirely, and, under ether, made extension, and applied a new plaster-of-Paris bandage in the same manner as before. He found the limb, at this time, shortened one and a half inch, and ununited. Half an hour later I found him suffering great pain about the ankle and knee, caused probably by the extension. During the night the pain abated gradually, and the next morning he was quite easy. Johnson left the hospital the last of July, and went to his home, where he was placed under the care of Dr. W. P. Ackerman.

August 20th.—Dr. Ackerman removed the splint, and found the thigh united, with a shortening of one and one-eighth inch.

September 28th.—I examined the limb with Dr. Ackerman, and confirmed his statement as to the length of the limb. The anchylosis of the knee was such that it could be moved only through about ten degrees. He stated that, after the first splint was applied, he had great pain in his leg constantly, extending from the knee to the ankle, and that he was obliged to take morphine every night during this period of time, to overcome the pain and enable him to sleep. When the first splint was removed, there were slight excoriations upon the top and side of the ankle. When the second splint was removed, there was an excoriation upon his back, caused by the splint, which had given him a good deal of suffering for some time; there was also an excoriation in the groin, caused by the splint, and a slight one upon the outside of the leg. None of these excoriations could have been deep, as they have left no marks.

6.—*Fracture of Shaft of Femur; Plaster-of-Paris Dressing; shortened One and a Quarter Inch.*

William Flanagan, aged twenty-one years, fell July 23, 1873, breaking his left femur near the middle. Fracture simple. Admitted to Bellevue, Ward 16, July 24th. Plaster of Paris was applied by one of the house-staff, reënforced with zinc strips, from the ankle to the loins. In applying the plaster, ether and pulleys were employed.

September 9th.—I found the limb united, with a shortening of one and a quarter inch, and with partial anchylosis of knee-joint, allowing motion through about ten degrees.

7.—*Fracture of Shaft of Femur; Plaster-of-Paris Dressing; shortened Three-eighths of an Inch.*

Louis Meredith, aged twenty-six years, fell from a ladder, January 15, 1874, fracturing his right thigh near the junction of upper and middle third. Admitted to Bellevue Hospital, Ward 16, January 17, 1874, service of Dr. Hamilton. On the fourth day of the accident the limb was dressed with plaster of Paris, including the pelvis and foot, by Dr. Torrey.

March 2, 1874.—Found the limb united, with a shortening of three-eighths of an inch.

8.—*Fracture of Shaft of Femur; Plaster of Paris; shortened Three-quarters of an Inch.*

Patrick Box, aged twenty-nine years, fell thirty-seven feet, October 14, 1873, breaking his femur near its middle. On the same day he was admitted to Ward 10, Bellevue Hospital. Buck's extension was employed the first ten days. One of the house-surgeons then applied the plaster-of-Paris dressings, from the loins to the ankle.

January 26, 1874.—I found the limb united, with a shortening of three-quarters of an inch. Measurement confirmed by one of the house-surgeons.

February 4th.—He fell on the ice and refractured the limb. He was brought to Bellevue and it was again dressed with plaster of Paris.

9.—*Fracture of Femur; Plaster-of-Paris Dressing; Union and Refracture; Plaster of Paris again applied; shortened One-half Inch, with a Large Bend.*

Andrew McGlenn, aged twenty-four years, was admitted to Ward 5, Bellevue Hospital, July 23, 1873, having just received a fracture of the left thigh near its middle. He had fallen from the front platform of a street-car and been struck by the wheel. There was also a lacerated wound near the seat of fracture. He was at once placed under the influence of ether, and extension made by pulleys, while Dr. Figaro applied plaster of Paris from the toes to the loins, including the pelvis. Three weeks later, the splint having been weakened by the fenestra made opposite the lacerated wound, the whole was removed and a new splint applied in the same manner as before. This remained on the limb three weeks, and being removed the union was found not to be firm, and plaster was again applied for a period of two weeks. On removal the bone was ascertained to be firm, but shortened three-eighths of an inch.

January 1, 1874.—When intoxicated, he fell on the cabin-floor of a ferry boat and refractured the femur. He was admitted to Ward 5, Bellevue (my service) on same day, and Buck's extension applied. On the 3d of January I found the limb shortened three-quarters of an inch.

5th.—Dr. Shaw applied plaster of Paris, using ether and the pulleys, the plaster extending from the toes to the loins. Dr. Shaw says that the pulleys brought down the limb to the same length as the other.

February 3d.—Opened dressing; united, with shortening of one-half inch. Large bend found at seat of fracture. Plaster reapplied.

10.—*Fracture of Femur near its Middle; Plaster-of-Paris Dressing; United, with Shortening of an Inch and Three-quarters; marked Deformity.*

John Nealson, aged thirty-nine years, admitted to Ninety-ninth Street Reception Hospital March 28, 1874, with a simple fracture of the right femur. He stated that three weeks before admission he fell and bruised his thigh, but that he was up in a day or two and walked about without crutches, yet it remained very painful at the point of injury. On the day of admission he fell again and broke the bone at the point of original injury. He was sent to Bellevue Hospital March 29th, and placed in Ward 4, under my charge. April 2d, the house-surgeon put him under the influence of ether, made extension with the pulleys until the shortening was entirely overcome, and then applied plaster-of-Paris bandages from the loins to the ankle. The patient remained in bed constantly until May 12th, when I found the bone united, with a shortening of one inch and three-quarters, and with a very striking outward bend at the point of fracture. During the time the patient was in bed the splint was opened, a portion cut out, and it was made tight again by bandages. Measurements confirmed by Dr. Isham, junior assistant to the staff.

11.—*Extra-capsular, Impacted Fracture of Femur; Plaster-of-Paris Treatment; shortened Five-eighths of an Inch; Foot slightly inverted.*

Owen Cummings, aged thirty-three, fell February 9, 1874, striking on external trochanter. Admitted to Bellevue Hospital, Ward 5 (Dr. Wood's service), same day.

The patient was placed under ether, and the limb examined by the house-surgeon to determine the nature of the accident. The trochanter major was found to be movable, and crepitus was distinct. On the third day, the limb being extended by compound pulleys until it seemed to be of the same length as the other, plaster-of-Paris bandages were applied, including the foot, leg, thigh, and pelvis. Subsequently the patient was permitted to go about with crutches.

March 25th.—Dressings removed; I find the fragments united, with a shortening of five-eighths of an inch; foot not everted; trochanter major greatly expanded and less prominent than upon the opposite side. Observations confirmed by Dr. Lewis, assistant house-surgeon.

12.—*Fracture of Femur, Humerus, and Forearm, and Dislocation of Elbow; Plaster-of-Paris Dressing; no Union of Femur.*

Julia Maher, aged seventy, admitted to Ward 18, Bellevue, October 4, 1873, with a fracture of the right thigh, near its middle, a fracture of the right humerus and left forearm, and dislocation of the elbow.

The results of treatment in the upper extremities were, I believe, satisfactory, but I have not examined to see.

Plaster of Paris was applied to the thigh on the following day by the house-surgeon, ether and pulleys being employed. Plaster extended from the loins to the ankle. The plaster was reapplied at the end of six weeks, and again on the ninth week, and finally removed at thirteen weeks. Subsequently the bones were moved violently and the ends rubbed together, and long splints were applied.

May 12, 1874.—No union.

13.—*Fracture of Femur, compound, near Middle; shortened Two Inches.*

Mary Ford, aged forty-four, fell from a window June 22, 1873, breaking her right femur a little above the middle. Taken first to Ninety-ninth Street Reception Hospital, and thence to Bellevue, Ward 18, service of Dr. James R. Wood. When admitted to Bellevue she was very feeble, and was supposed to be suffering from shock. There was a wound over the point of fracture, probably made by the bone thrust through the flesh; but the bone could not be seen at the time of admission.

25*th.*—She was placed under the influence of ether, pulleys were attached to the foot for the purpose of making extension, and the house-surgeon, Dr. Griffith, applied the plaster-of-Paris dressings, reënforced by zinc strips, after the plan of Dr. Fluhrer. The plaster extended from the foot to the loins, including the pelvis. The flesh-wound healed in about one week, and never discharged pus.

September 8, 1873.—When I took charge of this ward, I found the bone united, with a shortening of two inches, and a good deal of bending outward at the point of fracture. The knee was partially anchylosed. The measurements were confirmed by the house-surgeon and by Prof. Moore, of Buffalo Medical College.

14.—*Fracture of Femur; Middle; simple; shortened One Inch.*

John White, aged sixty-six, was struck by a passing wagon July 1, 1873, breaking his right femur a little above the middle. He was admitted to Bellevue Hospital, Ward 4, service of Dr. James R. Wood, on the same day. Buck's extension applied.

8*th.*—Plaster-of-Paris dressings applied by the house-surgeon without aid of anæsthetics or pulleys. His age and feeble condition induced the surgeons to omit the anæsthetics; he was allowed, however, to take six ounces of whiskey before extension was made.

September 8, 1873.—When I came on duty I found the bone united, with considerable deformity, caused by a bending outward at the point of fracture. The limb was shortened one inch. Measurement confirmed by the house-surgeon. Can move the knee-joint only through about ten degrees. He remains very feeble, but is sitting up and walking about the ward.

15.—*Compound Fracture of Femur; Lower Third; united, with about Half an Inch Shortening.*

John Van Pelt, aged fifty-one, fell ten feet February 27, 1873, and was admitted to Ward 16, Bellevue, within one hour after the receipt of the injury. He was found to have a fracture of the left femur, about four inches above the condyles, the lower end of the upper fragment being thrust through the flesh on the inside of the knee, making a small punctured wound. On the following day had a mild attack of delirium tremens.

The house-surgeon proceeded at once to make extension, and applied plaster-of-Paris bandages from the toes to the loins. No anæsthetic was used. He remained in bed four weeks, at the end of which time the bandages, having become loose, were removed. The patient was then placed under the influence of ether, and the plaster dressing was reapplied. A few days later he sat up, and at the end of four weeks more the dressings were again removed and not reapplied.

April 18, 1873.—I found the limb united, straight, and shortened three to four-eighths of an inch.

16.—*Fracture of Femur near its Middle; united with a Slight Bend, and shortened One Inch.*

Catharine Graham, aged fifty, admitted to Ward 30, Bellevue Hospital, service of Dr. Hamilton, January 6, 1872, with a simple fracture of the right femur about its middle. Patient fat, and skin flabby. Under the influence of ether, and while extension was made with pulleys, plaster of Paris was applied by the house-surgeon January 8th. The plaster caused considerable excoriation in the perinæum, but on about the fifth day she left her bed and went about on crutches.

Before she left the hospital I examined and measured the limb, and found it united, with a slight bend at the seat of fracture, and shortened one inch. It is said in the hospital record that she was very intractable, and persisted in bearing all her weight on the broken leg.

17.—*Simple Fracture of Femur; Junction of Lower and Middle Third; united, with Shortening of Three-quarters of an Inch.*

John Ashman, aged twenty-two, received a fracture of the right femur, at the junction of the lower with the middle third, August 2, 1873, caused by the fall of a piano upon the thigh. He was admitted to Ward 16, Bellevue Hospital, service of Dr. James R. Wood, on the same day. Extension, by means of a weight and pulley, was immediately applied (Buck's extension); twenty pounds were used in the extension, and this was continued until August 7th, when the house-surgeon applied plaster-of-Paris dressings under the influence of ether, and while pulleys were employed for extension. The plaster dressings extended from above the ankle to the loins, including the pelvis. Two or three days later he was up and about the ward.

September 23d.—The dressings were removed, they not having been disturbed since first applied.

24th.—I examined the limb and found it united, with a shortening of three-quarters of an inch. The passive anchylosis of the knee-joint was nearly complete, the limb moving only through about ten degrees.

18.—*Fracture of Femur below Trochanter Minor; Union without Shortening.*

James Smith, aged twenty-three, was injured by the fall of a pile of lumber January 23, 1871. He was admitted to Ward 7, Bellevue Hospital, on the same day, and was found to have a fracture of the left femur, a little below the trochanter minor. No external wound.

The plaster-of-Paris bandages were applied in the usual way by the house-surgeon, Dr. George A. Van Wagenen, within three or four hours after the receipt of the injury, while extension was made, but without an anæsthetic. He was permitted to leave his bed within a few days, and the dressings were not disturbed for five weeks, at which time they were removed.

March 13, 1872.—I examined and measured the limb carefully. Union had occurred without shortening, and the limb was straight.

Remarks.—This result is remarkable, and it will be observed that it was obtained without the use of an anæsthetic in the reduction of the limb. The early period at which the apparatus was applied is probably to be reckoned among the causes conducing to the fortunate termination.

19.—*Simple Fracture of Shaft of Femur just below the Trochanter Major, Plaster-of-Paris Dressing; Paralysis, Abscess, etc.; shortened One and a Half Inch, and deformed.*

Frederick Fisher, aged twenty-seven, fell through a hatchway November 8, 1873, striking on his left hip and fracturing the left femur, just below the trochanter major. On the same day he was admitted to Bellevue, service of Dr. Sands. Fracture simple; no injury of the limb below the knee.

Dr. Figaro applied Buck's extension at once, with about eighteen pounds' weight. This was kept on fourteen hours, but caused so much pain that it had to be taken off. The limb was left without apparatus until November 13th, when, the swelling of the thigh having diminished considerably, plaster-of-Paris dressings were applied from the toes to the loins, the patient being under the influence of ether, and extension being made with pulleys. During the time the plaster was on, he sat up six or seven days.

December 2*d.*—The dressings were removed, and never reapplied. The patient says that, on removal of the dressings, he found he had no sensation in the limb below the knee. A battery was used three times to restore sensation, but he did not feel the current. The leg was also much swollen below the knee, and especially in the calf.

4*th.*—Opened an abscess in the calf.

11*th.*—Suspended limb, and made a counter-opening in the leg.

20*th.*—Slough over the heel.

28*th.*—Another abscess in front of leg. Nearly the whole of the tibialis anticus sloughed away.

January 30, 1874.—Patient on crutches. Muscles on anterior part of leg paralyzed.

February 24*th.*—Still loss of power in muscles of leg. Patient can walk with shoes, without a crutch. Discharged, but nothing said in the records about shortening or deformity, or that the ulcer had not healed.

May 5*th.*—He was admitted to St. Francis's Hospital, with a large ulcer on the knee and caries of the calcaneum. This was the same sore which developed in Bellevue, and had never healed. On measuring his thigh, I find it shortened one and a half inch, with a very great outward bend at the seat of fracture. Dr. Rose, who has confirmed my measurement, subsequently operated for the removal of the carious bone.

20.—*Simple, Comminuted Fracture of Femur, near its Middle; Gangrene, Amputation, and Death.*

James Maroney, aged twenty-three, admitted to Ninety-ninth Street

FRACTURES OF THE FEMUR, TREATED BY PLASTER, IN PERSONS OVER EIGHTEEN YEARS.

NAME.	Age.	Date of Accident.	Date of Admission.	Character of Injury.	Surgeon.	Treatment.	Result.
1. James Reidy........	26	Jan. 10, 1874.	Jan. 10, 1874.	Middle shaft. Simple.	Fluhrer. Park Hosp.	Buck's extension same day. Jan. 20, plaster, ether, and pulleys; loins to toes. Kept on six weeks.	No hospital record. Short three-fourths of inch. Straight.
2. Michael Mullaney....	24	Sept. 9, 1873.	Sept. 9, 1873.	Middle shaft. Simple.	Early and Fluhrer.	Sept. 9, Buck's extension. 13th, plaster, with ether and pulleys; ankle to loins; Dr. Early. 29th, Dr. Fluhrer reapplied plaster (toes to loins), ether, and pulleys. Kept on twenty-four days. Taken to Bellevue. Recorded in Fluhrer's record half an inch.	Short one and one-fourth inch.
3. Alexander Frazer....	40	Jan. 7, 1874.	Jan. 7, 1874.	Just above knee. Simple.	Early.	Buck's extension, Jan. 7. Plaster, Jan. 10, including foot and pelvis; ether and pulleys. On six weeks.	No hospital record. Fluhrer's record says $\frac{1}{8}$ in. Short. $\frac{5}{8}$ inch
4. J. P. Lendborg......	25	Feb. 20, 1874.	Feb. 20, 1874.	Middle shaft. Simple.	McKowan.	Buck's extension, Feb. 23. Feb. 26, plaster, including foot and pelvis; ether and pulleys. Kept on seven weeks. Says those who first measured thought no shortening.	One inch.
5. Eugene B. Johnson..	30	July 2, 1873.	....	Middle. Simple. Also fracture of radius.	Fluhrer.	Buck's exten. July 12, plaster, from toes to loins; ether and pulleys (by assistant, under instructions of Fluhrer). July 31, Fluhrer reapplied dressing. Found limb short, one and one-half inch.	One & one-eighth inch; anchylosis.

6. William Flannagan.	21	July 23, 1873.	July 24, 1873.	Middle. Simple.	Bellevue. Griffiths.	July 24, Buck's extension. Subsequently Dr. Griffiths applied plaster, ankle to loins; ether and pulleys.	One & one-fourth in. Anchylosis.
7. Louis Meredith.....	26	Jan. 15, 1874.	Jan. 17, 1874.	Middle. Simple.	Bellevue. Hamilton and Torrey.	Jan. 19, plaster, including foot and pelvis, by Dr. Torrey.	Three-eighths in.
8. Pat. Box..........	29	Oct. 14, 1873.	Oct. 14, 1873.	Middle. Simple.	Bellevue. Gouley and Street.	Oct. 14, Buck's extension. Oct. 24, plaster, ankle to loins; Dr. Street.	Three-fourths in. Refractured Feb. 4, 1874.
9. Andrew McGlenn...	24	July 23, 1873.	July 23, 1873.	Middle. Simple, but with a lacerated wound.	Bellevue. Figaro.	July 23, plaster, toes to loins; ether and pulleys. Three weeks later renewed in same manner. At end of three weeks was not firm. At end of 2 weeks nearly firm. Refractured, Jan. 1. Plaster Jan. 5.	Delayed union. Short. ⅜ inch. Refractured Jan. 1, 1874, and short one-half, with deformity.
10. John Nealson[1]....	39	Mar. 28, 1874.	....	Simple. Middle.	99th Street Hospital. Hamilton and Lewis.	March 29, plaster, loins to ankle. Dr. Lewis, ether and pulleys. Said he had overcome shortening entirely. Patient remained in bed. Splint became very loose, was opened and tightened.	One and three-fourths, with a strong outward bend.
11. Owen Cummins....	33	Feb. 9, 1874.	....	Extra-cap.	Bellevue. Wood.	Feb. 9, plaster, including foot and pelvis; ether and pulleys.	Five-eighths inch.
12. Julia Maher	70	Oct. 4, 1873.	....	Middle. Simple, with dislocation of elbow.	Bellevue.	Oct. 5, plaster; ether and pulleys, loins to ankle. Reapplied at six weeks and at nine weeks. Renewed at thirteen weeks. No union.	May 12, 1874, no union.

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[1] Three weeks before fracture he had bruised his leg.

FRACTURES OF THE FEMUR, TREATED BY PLASTER, IN PERSONS OVER EIGHTEEN YEARS.

NAME.	Age.	Date of Accident.	Date of Admission.	Character of Injury.	Surgeon.	Treatment.	Result.
13. Mary Ford........	44	June 22, 1873.	....	Middle. Complicated.	Bellevue. Wood.	June 25, plaster; ether and pulleys, foot to loins. Wound healed in two weeks, and never discharged pus.	Two inches, and much bent. Anchylosis.
14. John White.......	66	July 1, 1873.	....	Middle. Simple.	Bellevue. Wood.	July 1, Buck's extension. July 8, plaster. No pulleys or anæsthetic.	One inch. Much bent. Anchylosis.
15. John Van Pelt.....	51	Feb. 27, 1873.	....	Four inches above condyles. Compound. Small wound.	Bellevue.	Feb. 27, plaster, toes to loins. No anæsthetic. At end of four weeks renewed; ether and pulleys on four weeks more.	Half inch or three-eighths.
16. Catherine Graham.[1]	50	Jan. 6, 1872.	....	Middle. Simple.	Bellevue. Hamilton.	Jan. 8, plaster; ether and pulleys. Some excoriation in groin.	One inch. Slight bend.
17. John Ashman......	22	Aug. 2, 1873.	....	Middle.	Bellevue. Wood.	Aug. 2, Buck's exten. Aug. 7, plaster; ether and pulleys, ankle to loins. Dressings removed Sept. 3.	Three-fourths inch. Anchylosis.
18. James Smith......	23	Jan. 23, 1871.	....	Just below troch. Simple.	B'vue. Van Wagenen.	Jan. 23, plaster. No anæsthetic. Pulleys.	No shortening.
19. Frederick Fisher...	27	Nov. 8, 1873.	....	Just below troch. Simple.	Bellevue. Sands.	Nov. 8, Buck's extens'n. Fourteen hours by Dr. Figaro. Nov. 13, plaster, from toes to loins; ether and pulleys. Dec. 2, removed. Paralysis and insensibility of leg.	One one-half inch. Paralysis. Abscess. Caries.
20. James Maroney....	23	Nov. 25, 1872.	....	Middle. Simple.	99th Street. Bailey.	Nov. 26, plaster, from toes to body. Nov. 28, toes purple, gangrene to knee. Dec. 4, was amputated.	Died Dec. 8.

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[1] Hospital record says three-fourths inch.

Perfect	1
Shortened three-eighths inch	2
“ one-half inch	1
“ five-eighths inch	1
“ three-fourths inch	3
“ one inch	3
Shortened one and one-eighth inch	1
“ one and one-fourth inch	2
“ one and three-fourths inch	1
“ two inches	1
Case of gangrene and death	1

Twenty cases. Average shortening in nineteen cases, more than three-fourths inch.

Reception Hospital November 25, 1872, with a comminuted fracture of the right femur near its middle, the thigh having been traversed by a loaded cart a few minutes before admission. No pulsation in the posterior tibial artery.

November 26*th.*—The house-surgeon applied a plaster-of-Paris bandage from the toes to the body. Patient remained in bed.

28*th.*—I noticed that the toes were purple and cold, and, on opening the splint, the limb was found to be gangrenous as high as the condyles of the femur. Pulse 112. The limb filled the splint compactly.

December 4*th.*—Dr. Mott amputated at the point of fracture. The patient died December 11th. The records say: "Found the popliteal artery obliterated, with coagula of blood. . . . The disorganization of the muscles and other tissues below this point prevented any further examination."

21.—*Fracture of Femur; Death from Ether.*

John Stockander, aged sixty-eight; German saddler; admitted August 2, 1872, Ward 13. Is a moderate drinker; no venereal. On day of admission patient fell down a flight of stairs, striking on his hip and causing a fracture of left thigh just below the trochanters. Shortening one and a half inch. Buck's extension was applied at once.

August 20*th.*—Patient is this afternoon put in readiness for the application of a plaster splint to thigh. Ether is slowly administered, the patient first respiring well enough, but after a few, perhaps ten minutes, it is noticed that the breathing is jerky and gasping. His pulse, however, is still full and regular. One or two compressions of the thorax, with bringing forward of the tongue, make his breathing again natural. The anæsthetic is withheld then for four or five minutes, patient at the end of that time beginning to move about. The ether is again administered, the patient still breathing well. After a few minutes, however, his pupils are noticed to dilate rapidly and his breathing to cease. No vomiting. Artificial respiration is again tried, but without effect. The battery is then applied, but meets with no other response than occasional convulsive movements of the arms, which gradually grow weaker and then cease. These efforts are continued for forty minutes, but patient gives no signs of life. Death occurred about 4 P. M.

Autopsy, *August* 20*th*, 7 P. M.—Brain and membranes are normal. Trachea and larynx normal, but rather pale. Heart contains a little fluid blood, with a little atheroma at the base of the aortic valves. Lungs have old adhesions over both. Emphysema exists. Mucous membrane of large bronchi thickened. Right lung, lower lobe, is œdematous, and its lower portion in red hepatization. Spleen normal. Kidneys are rather small and congested. Adhesions of capsules. Stomach and intestines normal.

22.—*Fracture of Femur; Attempt to give Ether for the Purpose of applying Plaster of Paris, causing Suspension of Respiration; the Attempt abandoned, and Limb treated by Extension with Pulley and Weight; result, Limb straight and shortened Three-eighths of an Inch.*

Mary Shules, aged twenty, fell about ten feet December 23, 1873, breaking her right femur in its middle third. Some surgeon applied a plaster-of-Paris dressing, but this had been removed by the ambulance-surgeon before she was brought to Bellevue.

December 24*th.*—She was admitted to Ward 30, Bellevue Hospital, service of Dr. Sands.

25*th.*—She was put under the influence of ether by the house-surgeon, Dr. Figaro, and, while he was applying the flannel bandage, preliminary to the application of the plaster-of-Paris dressing, the limb being held in extension by pulleys, she suddenly ceased to breathe, and her face became purple. She had then been under the influence of ether about fifteen minutes, and she had vomited. Dr. Figaro turned her upon her side, according to Marshall Hall's method; then tried Sylvester's method, and finally resorted to electricity. Dr. Figaro thinks her respiration was completely suspended two or three minutes. No more ether was employed, and the limb was subsequently dressed with lateral splints. Extension was applied by means of a pulley and a weight of thirteen and a half pounds, the foot of the bed being elevated about four inches. No perineal band was used.

February 17, 1874.—I examined the limb with Dr. Figaro, the house-surgeon, and we found the limb united, perfectly straight, and shortened three-eighths of an inch. The dressings had been removed since, and she was during the day sitting up in her chair. There still existed moderate anchylosis of the knee-joint, the limb moving freely through fifteen degrees. At one time the extension caused a slight abrasion above the heel.

NAME.	Age.	Date of Accident.	Character of Injury.	Surgeon.	Treatment.	Result.
21. John Stockander .	68	Aug. 2, 1873.	Just below troch.	Bellevue.	Aug. 2, Buck's exten. Aug. 20, ether and extension. Short. three-eighths inch.	Death from ether.
22. Mary Shules	20	Dec. 23, 1873.	Middle. Simple.	Bellevue. Sands.	Dec. 25, ether. Impending death, and plaster not applied.	

Immediate Dressing.—I have no doubt that those who delay the application of plaster five or six days, or until after the subsidence of the first acute swelling, avoid, to a great extent, the danger of gangrene, yet not entirely; but Dr. Sands insists upon the safety of early or immediate applications, and attributes, in a great measure, the remarkable results to this practice.

Perinæum for Counter-extension.—Dr. Sands also considers the *perinæum* the point upon which the surgeon is to depend for the counter-extension. Very few of those who have used plaster, in the way described, assent to this doctrine—the danger from pressure made at this point, continuously, being fully understood. As to the counter-extension made from the wings of the pelvis, which are the only remaining points, it is, in most cases, after six or eight days, practically nothing. I have almost always been able, at this time, to put my whole hand down between the pelvis and splint, fairly upon the thigh. If, also, the plaster does not include the foot, it is generally found that, after a few days, it incloses the limb so loosely that there is very little or no extension. The top of the foot, therefore, and the heel, are actually the parts alone to be trusted for the extension.

Readjustment.—We have often been told that, if the plaster becomes loose, it can be cut open and tightened. Experience has shown that this will not do. The mould is thereby too much weakened to give the proper support when the patient is up; and, in folding it in, it is found not to fit well. The practice is, therefore, almost uniformly, at Bellevue, either to permit it to remain loose, or to take it off entirely, and, placing the patient under ether, with the aid of pulleys to dress it again, in the same manner as at first.

Delayed Union.—Billroth thinks he has noticed delayed and non-union more frequently, under the plaster-treatment, than under any other. I think I have noticed the same, but my facts of observation are not sufficiently numerous to enable me to speak positively upon this point.

Objections of Minor Importance.—No reference has been made, in this communication, to the amount of practical experience required to apply plaster skillfully, for this can be attained; nor to the fact that it is necessary, generally, in the case of women as well as of men, to expose the body from the feet to the loins, one-half of the body being stretched with pulleys, beyond the table or the bed, in a state of complete nudity, and remaining in this position for from one to two hours. This is a matter of taste only, and, if the patient consents, no one has a right to object. No allusion has been made to contusions and swellings of the perinæum, which occur occasionally, in consequence of the pressure of the iron bar, or perineal strap, during the application of the plaster. These accidents do not occur very often, and are of minor importance.

Danger from Anæsthetics.—One case of death from ether, while the patient was in extension, and while the dressings were being applied, and one nearly-fatal accident under the same circumstances, may have been coincidences merely; but, since ether seldom causes death, these two occurrences may properly lead us to inquire whether the exhibition of anæsthetics, under these circumstances of constraint and decubitus, is not actually attended with increased dangers.

Gangrene.—The two[1] examples of gangrene of the limb, ensuing upon the application of plaster, may appear to be satisfactorily explained, without reference to the influence of the dressings. To me, they are not. Never in my life have I seen such a result, occurring at this period of a fracture, in this rapid manner, except where tight dressings have been applied. When these accidents have happened in the use of the "primary roller," or of Seutin's dressing, they have been sudden and almost unheralded. (*See* a case reported in the same number of this JOURNAL.) The bandage, it is always affirmed, was not applied tightly; there was little or no pain; the limb, if any portion was exposed, looked healthy a few hours before; and, as soon as the coldness, numbness, and discoloration were detected, the dressings were removed—but it was too late. The gangrene went on, and the patient died. Billroth has noticed, also, that a bandage removed under these circumstances rarely saves the limb. You see how it happens: the swelling having increased enough to fill the mould completely, superficial venous circulation is arrested, and, from this moment, the process of strangulation proceeds with great rapidity. All circulation is soon cut off, and it is, in effect, an Esmarch's bandage. A bandage applied over splints which do not entirely encircle the limb, leaving portions of integument without pressure, seldom or never causes these accidents. (For a large number of cases in point, *see* "Gangrene after Fracture," in my "Treatise on Fractures and Dislocations.")

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[1] One has been accidentally omitted, and will be supplied in the next number.

In conclusion, I wish to say that, while I recognize the convenience and utility of plaster of Paris, and of other immovable forms of dressings, in the treatment of certain fractures, it has not proved satisfactory, under my observation, when applied in the treatment of fractures of the femur; and especially when applied immediately after the occurrence of the fracture—my own method of treating these fractures, without perineal bands, with side-splints, adhesive-plaster extension, pulley and weight, having given better results (with no accidents) in the adult. In the case of children, my double thigh-splint has also given better results than has plaster of Paris. These methods are far in advance of the double-inclined planes, and of Desault's, Boyer's, Hagedorn's, Gibson's, and other long splints. They avoid all danger of ligation and strangulation of structures; there is no perineal band to cause ulceration; extension is made by a method which equally—when properly applied—shuns the danger of ulceration about the heel, an accident so common with the old gaiter; the patients are comfortable; the limbs are seldom united with deformity; and the average shortening is less than with any other method yet devised. From these methods to the method now employed so much at Bellevue, is, in my opinion, a step backward.

Condition of a Faithful Measurement of the Thigh.—The fact that a man walks without a halt is no evidence that there is no shortening of the limb. In this regard patients are very unequal; one, having a shortening of only half or three-quarters of an inch, will limp perceptibly; while another, with a shortening of one inch or even one inch and a half, may not limp at all. This has been observed repeatedly. Nor is it any evidence that the limb is not shortened because, while lying in bed, the heel of the broken limb can be brought down to the level of the other. By pitching the pelvis, the spine remaining erect, the heel may be made to descend, in most persons, two inches or more.

Measurements made from the symphysis pubis, or from the round end of the anterior superior spinous process, are unreliable.

The patient should repose upon his back, upon an even surface, with his lower extremities as nearly as possible in a line with the axis of his body, the two wings of the pelvis being in the same horizontal (transverse) line.

A flexible, graduated tape-line is to be preferred to the steel tape-measure. The foot being steadied by an assistant, the surgeon should put his thumb-nail against the line where it joins the ring, and push his nail into the skin just *below* the anterior superior spinous process of the ilium, pressing firmly up and back, the back of his nail resting upon the skin. In this way he obtains a fixed point, and he can obtain an exactly corresponding point upon the opposite side. Below, the measurement may be made from either malleolus, but the outer has the most defined extremity, and is generally preferred. In most cases, for some months after the close of the treatment there is some œdema about the ankle, which renders it necessary to use great care in determining the point of the malleolus. The thumb-nail of the opposite hand may be used for this purpose, resting vertically upon the skin (flat against the lower end of the malleolus).

There are a few sources of error which cannot be avoided. Occasionally, but very rarely indeed, as the observations of Prof. C. La Ford have shown, the malleoli of the two limbs are of unequal length; and, in a few very rare cases, one limb is congenitally, or from defective growth, shorter than the other.

Supplement, containing reports of nine cases of fracture of the femur, treated recently without plaster, chiefly by my own method. These are not selected, but, as in the case of the fractures, already reported, they are taken in the order of their occurrence, and include all of a late date in which I have been able to obtain a measurement.

1.—*Fracture of Femur; my own Method of Extension with Side-Splints; Union in Four Weeks, without Shortening.*

John Halpin, aged eighteen, admitted to Ward 16, Bellevue, April 11, 1874, with a simple fracture of the right femur near its middle, caused the same day by a log, which rolled upon it. On the second day after admission, my modification of Buck's extension was applied, with side-splints, using from fifteen to twenty pounds' extension.

May 12th.—The limb was found united, perfectly straight, and no shortening. Measurements confirmed by Dr. Isham, junior house-surgeon.

2.—*Fracture of Shaft of Femur; dressed with Dr. Hamilton's Double Splint; no Shortening.*

Charles Brown, aged six, fell down a flight of stairs August 27, 1873, breaking his left femur near the middle; admitted to Bellevue Hospital same day. The limb was dressed with Dr. Hamilton's double thigh-splint for children, and extension, with five pounds' weight, was employed.

October 1, 1873.—I found the limb united, without shortening, and straight. Measurement confirmed by the house-surgeon.

3.—*Fracture of Femur; no Shortening.*

May 20, 1873, Harry Mack, aged six, was struck by a cart, breaking his left femur about its middle, causing at the same time a superficial wound near the seat of fracture. Dr. S. Waterman, the attending surgeon, requested me to see the patient with him; and on the 22d, as soon as the apparatus was constructed, we applied a double splint, making extension with a weight and pulley, the dressing being the same as that described in the fourth edition of my "Treatise on Fractures and Dislocations," at page 427, and in the second edition of my "Treatise on Surgery," at page 302. On the 27th the dressings had become somewhat loosened, and were moistened with urine, and were reapplied.

August 5*th.*—This boy was brought to my office, walking with the aid of crutches. He was stripped in my presence, and the limb carefully measured. The union had taken place without shortening or deformity. Motions of the knee-joint quite free. Dr. Waterman confirms the measurement.

4.—*Fracture of Femur; simple; Child aged Nine Years; treated with Movable Dressings; Result, shortened One-quarter of an Inch, and straight.*

Michael McCormick, aged nine years, was run over by a wagon October 4, 1873, and was immediately conveyed to Bellevue Hospital and placed in my ward. He was found to have a fracture of the left femur near its middle. There was also a small lacerated wound on the inside of the thigh. Dr. Terriberry, my house-surgeon, applied at once the long, double splint, recommended by me for the treatment of fractures of the thigh in children, with the addition also of extension—twelve pounds.

Five weeks after the receipt of the injury all dressings were removed, and the thigh was found to be united, straight, and with a shortening of one-quarter of an inch. Dr. Terriberry, on measuring the limb, thought there was no shortening. I measured the limb again on the 14th of November, and confirmed my previous measurement.

5.—*Fracture of Femur; simple; united, with Shortening of Three-eighths of an Inch.*

Edward Morrissey, aged thirty-three years, was admitted to Bellevue Hospital, Ward 16, October 12, 1873, having received a fracture of the left femur near its middle, by a fall upon the floor of his own house. The accident had just occurred. During the same day it was dressed by Dr. Terriberry, my house-surgeon, with my modification of Buck's apparatus. At first twenty-three pounds were employed in the extension. After a few days this was reduced to twenty pounds, and subsequently at intervals of time it was reduced to fifteen pounds and then to ten pounds. Finally, all extension was removed at the end of six weeks, and the side-splints were removed also, when the limb was found united, perfectly straight, and with a shortening of three-eighths of an inch. The measurement was confirmed by Dr. Terriberry and others.

6.—*Neck of Femur; extra-capsular.*

Sarah White, aged forty years, fell August 13, 1871, and was admitted to Bellevue, Ward 30 (service of Dr. James R. Wood) August 15th. September 1st she came under my care. The limb was treated by extension and counter-extension effected by weight and pulley, and with a long side-splint to prevent eversion; the mode of treatment being the same as that described in the fourth edition of my "Treatise on Fractures and Dislocations," at pages 372, 381. This patient left the hospital March 21, 1872, with the limb shortened five-eighths of an inch. There was no eversion of the toes, and she could walk with a cane. The great trochanter was expanded, as is usual after this fracture.

7.—*Extra-capsular Fracture of Femur; Buck's Extension; shortened One Inch.*

Catherine McGrahan, aged fifty years, fell on the ice January, 1874, breaking right cervix femoris, without the capsule. Admitted to Park Reception Hospital on the same day. Buck's extension was applied by the resident physician, Dr. Fluhrer. When union had taken place I found the limb shortened one inch. Patient resides at No. 120 Broadway.

8.—*Fracture of Femur; probably intra-capsular; simple Extension; shortened Seven-eighths of an Inch.*

Kate Hennessey, aged sixty years, fell January 23, 1874, striking on her right trochanter; taken the same day to the Park Reception Hospital, but no dressings were applied for more than seven days, then extension was applied, but no long side-splint to prevent eversion. She remained five weeks in the Park Hospital, and was then sent to Bellevue. Since then extension has only been applied during the nights. During the day she is up in her chair, and upon crutches. May 21, 1874, I find the limb shortened seven-eighths of an inch, and the limb slightly everted.

FRACTURES OF THE FEMUR, TREATED WITHOUT PLASTER.

NAME.	Age.	Date of Accident.	Character of Injury.	Surgeon.	Treatment.	Result.
1. John Halpin[1]	18	April 11, 1874.	Simple. Middle.	Hamilton.	April 13, my apparatus. 20 lbs.	May 12 (one month). United. Straight. No shortening.
2. Charles Brown	6	Aug. 27, 1873.	Middle. Simple.	Hamilton.	Double, thigh-splint. 5 lbs.	No short'ng. Straight.
3. Harry Mack, private patient.	6	May 20, 1873.	Middle. Slight wound of skin.	Ha'ton and Waterman.	Double, thigh-splint on 22d of May.	No short'ng. Straight. No anchylosis.
4. Michael McCormick..	9	Oct. 4, 1873.	Middle. Small lacerated wound on middle of thigh.	Hamilton and Terriberry.	Double, thigh-splint on Oct. 4, by Dr. Terriberry. 12 lbs. United at end of five weeks.	Two-eighths inch. Dr. Terriberry found no shortening.
5. Ed. Morrissey	33	Oct. 12, 1873.	Middle. Simple.	Hamilton and Terriberry.	Oct. 12, 1873, my apparatus. 23 lbs.; then reduced to 20, 15, etc. At end of six weeks united.	Three-eighths inch. Straight.
6. Sarah White	40	Aug. 13, 1871.	Neck. Extra-cap.	Wood, two weeks. Hamilton.	My apparatus.	Five-eighths inch. No eversion.
7. Catherine McGrahan.	50	Jan., 1874.	Neck. Extra-cap.	Fluhrer, at Park Hosp.	Buck's extension.	One inch.
8. Kate Hennessey	60	Jan. 22, 1874.	Neck. Intra-cap.	Fluhrer, at Park Hosp.	No dressings for seven days. Then Dr. Terriberry applied extension, but no long side-splint. Sent to Bellevue at end of five weeks.	Seven-eighths inch.
9. Mary Shules........	20	Dec. 23, 1873.	Middle. Simple.	Dr. Figaro, at Bellevue.	(After accident with ether.) Buck's extension.	Three-eighths inch.

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[1] A few weeks later he got upon crutches and proposed to dance a "hornpipe;" fell and refractured.

Four cases of eighteen years and under, three perfect, and one two-eighths inch.
Five cases over eighteen years, three-eighths inch least, one inch max.
In all, nine cases, with an average of less than three-eighths inch.

Art. II.—*Gastrotomy in Stricture of the Œsophagus.*[1] By A. Jacobi, M. D., Clinical Professor in the College of Physicians and Surgeons, New York.

Mathilda Weinberg had seven children, the last twenty years ago, when she was thirty-two years old. All of her confinements were normal. She never suffered from her breasts while nursing. Her menstruation, during both her unmarried state and in the intervals between carrying and nursing her several infants, was regular and painless, until the age of nearly forty, when it suddenly ceased. About that period of her life she was taken ill, and suffered severely from headaches—to attacks of which she had been liable in former years—nervous prostration, hysterical attacks, and the symptoms of general hydræmia, for about nine months. Toward the close of this spell of sickness, she came under my notice. Emaciation, prostration, and hydræmia, were excessive; various hysterical symptoms intervened, such as globus, neuralgias, and œdematous swellings, so that it required removal from a dark and stifled tenement bedroom, good feeding, careful nursing, and constant encouragement, to enable her to trust her feet again. It was, when I saw her first, impossible to decide if, and which, local disease had initiated these severe symptoms more than half a year previously.

When her general health improved, her menses reappeared with some regularity. About this time, in 1861, she noticed a small, moderately hard, painless lump in her left breast, which gradually increased in size, until about the end of 1861, when I saw her again; the whole breast was then infiltrated with a hard mass, the surface being pretty smooth, the nipple retracted. The breast was removed about a year after the first appearance of the pseudoplasm; the wound healed kindly. Four months afterward, small lumps appeared at and near the inner extremity of the cicatrix, which were also removed, and proved scirrhous. Six months after the second operation, a lump of the same nature developed in, and was after some time removed from, the right breast. And a year afterward, in the cicatrix of the left side, and in the axillary glands, new deposits took place, which were removed in the fourth operation for that purpose. As, meanwhile, the case had been running its course over four years, as, moreover, the general appearance of the patient, though thin, fleshless, and emaciated, had not much changed, I reported its history at a meeting of the Pathological Society, and, in presenting the specimen, requested that a special committee be appointed for its microscopical examination, there being no regular microscopical committee in existence at that time. The committee reported, and declared the neoplasm to be scirrhous. After that time, new lumps would appear in rapid succession in the whole length of the cicatrix, and in the surrounding cutis, of a more or less rapid growth, with discoloration, from the size of a pea to that of a child's fist, and from the normal color of the integument to a purplish hue or a brownish, grayish tint. In a number of them, superficial or deep ulcerations would take place, some with a very offensive smell, some bleeding profusely in intervals, very few of them painful, though irritated, and only when an attack of erysipelas would set in. She had erysipelas after her last two operations, and had been liable to it some five or six times every year since, the first symptoms appearing, as a rule, in the neighborhood of a new ulceration; in some instances, however, over distant parts. Thus she had from ten to twelve attacks of erysipelas, extending over from five days to three weeks, up to the end of 1867, when numberless lumps of the above description covered the whole breadth of the chest horizontally, with a vertical range of from four to six inches. The use of the knife was dispensed with; lotions of chlorate of potassa, of carbolic acid with glycerine, and of subsulphate of iron, were used almost incessantly, according to the changing indications. Besides, during a great part of 1867, she took from four to eight grains of carbolic acid daily, without any perceptible effect. About the beginning of 1868 I commenced an electrolytic treatment, nearly all of which was directed and administered by Dr. H. Guleke. He attended her regularly from the 18th of March to the 24th of May, 1868, employing eight elements of the largest Stoehrer galvanic battery, one electrode being applied to the sternum, the other to the indurations. On the 10th of April the pain in the principal lumps, which had been on the increase for some time, had almost disappeared. The indurations became smaller and paler. No more hæmorrhages. Ulcerations became smaller, the indurated edges softer. On May 24th, although meanwhile the treatment had to be interrupted because of a return of menstruation, and again by an attack of erysipelas, we noticed "complete cicatrization and almost complete disappearance of hardness in lumps and edges."

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[1] Read before the New York Academy of Medicine, June 18, 1874.

Still, this improvement was but temporary. The patient was so used to suffering, and so well pleased when life was just bearable, that under ordinary circumstances she would stay away for months, only to return now and then for advice, or the prescription of a medicine to be obtained at public expense.

During October, 1873, the patient noticed some difficulty in swallowing, and at times immediate return of ingesta into the mouth. The obstacle to this free passage she experienced just below the fauces. There was no nausea. When food reached the stomach, it occasioned no distress or vomiting. Dysphagia was much relieved by the occasional introduction of bougies, even when they could not be passed through the whole length of the stricture. She would come to my office once or twice a week, until in February, 1874, her visits had to become daily, or almost daily. At that time the stricture, which I found about eight inches behind the teeth, on a level with and a little below the cricoid cartilage, became more narrow, incapacitating her completely for partaking of solid food. No stomach-tube being admitted, I resorted to the use of pointed French urethral bougies, of which No. 18 to No. 24 would readily pass. Meanwhile her appetite remained good, too good in fact for her difficulty in deglutition and suffering, while her bowels were rather constipated.

When she was admitted to the Mount Sinai Hospital, on April 8, 1874, she presented the above-mentioned appearance, with some additional enlargements of axillary lymphatic glands, another in the supra-clavicular region, and great emaciation and debility. Her viscera proved healthy. The uterus somewhat large. The treatment consisted, in the beginning, of the introduction of French bougies through the stricture twice daily, deodorizing applications to the scirrhous ulcerations of the breast, and the best possible liquid food.

On April 18th she was unable to swallow any thing, but a catheter was readily passed, and milk poured into the œsophagus from a fountain-syringe. I emphasize the fact that the instrument through which the injection was made, or rather through which the food was poured, was a catheter of common size, which reached but a little distance below the stricture, and certainly not through the cardia. It *disproves* the assertion that the whole length of the œsophagus, with its pharyngeal insertion, is required for the starting of peristaltic motion, and that in cases of œsophagotomy the simple pouring in of liquids through the fistula—without the cardia being passed by the sound—must necessarily prove ineffective. On April 19th she recommenced to swallow in her former way. Still the incident of the day previous hastened my intention to relieve the patient from her imminent danger of starvation, and before her strength should be too much reduced. Thus, after consultation with the other members of the medical board, and in the presence of a number of medical gentlemen of the city, I proceeded to perform gastrotomy April 24th, at 3 P. M.

The patient was on her back, chest and head but slightly raised, and anæsthetized. The incision was commenced below and between the cartilaginous ends of the seventh and eighth ribs, and was carried through the skin and subcutaneous muscular tissues, vertically downward, about two and a half inches. Several small arteries had to be ligated, although the handle of the scalpel was employed more than the blade. Fascia transversalis and peritonæum having been divided, the omentum presented itself. Exploration by the finger exhibited the margin of the liver, the small curvature of the stomach, and pancreas, and inspection on pulling out the stomach, the venæ epiploicæ. Then a solution of bicarbonate of soda, followed by a solution of tartaric acid, was introduced into the stomach through a catheter passed beyond the stricture, for the purpose of inflating the stomach, of marking its outlines, and facilitating the incision through the anterior wall. The experiment, which had proved very successful a few days before, during my examination of the parts, failed to give satisfaction. Through the lower end of the opening into the peritonæum, about one and a half inch in length, I introduced a curved needle and silk ligature into and through the anterior wall of the stomach, which was held by pincers. It was thereby brought forward and held to the anterior wall of the abdomen. One and a quarter inch above this point the same proceeding was repeated, and between these fixed points the incision into the stomach was made, one inch in length. A little gas and very little mucous froth escaped, and an artery in the wall of the stomach was ligated. Eight silk ligatures were carried through the whole thickness of the stomach, about one-sixth or one-fourth of an inch from the incision, and through the external integument, sufficient to hold it in close juxtaposition and prevent any escape of fluids from the stomach into the abdominal cavity. Finally, a Carlsbad pin, and two silk ligatures besides, were used to close the external wound below the attachment of the stomach. Wet compress and bandage were applied, and, because of continued efforts at vomiting, a subcutaneous injection of sol. Magendie was made immediately after the operation.

At 5 P. M.—Pulse 70; extremities cool. Enema of two ounces of brandy-and-water.[1]

6 P. M.—Pulse 82, temperature 96.7. Beef-tea ℥vj. Very quiet. No retching.

9 P. M.—Milk ℥vj, brandy ℥j.

10 P. M. — Pulse 80, temperature 98.8. Beef-tea ℥vj. Quiet. One slight effort to vomit.

April 25th, 2 A. M.—Pulse 90, temperature 98.8. Food, morph. gr. $\frac{1}{6}$. Quiet through the night.

6 A. M.—Pulse 90, temperature 100. Vomited some frothy fluid; severe retching. Morph. gr. $\frac{1}{6}$; either beef-tea or milk ℥vj every two hours.

10 A. M.—Pulse 106, temperature 101.8. Nausea, thirst; ice-water with brandy in small quantities by the mouth. Bisulphat. quin. gr. x, and food retained.

11 A. M.—Morph. gr. $\frac{1}{6}$.

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[1] To avoid repeating, I state here that all food and quinine were given in an enema; morphia, when no contrary statement is made, subcutaneously, and the temperature was always taken in the vagina.

2.30 P. M.—Pulse 100, temperature 101.4. Slight dullness, on percussion from wound downward to the left, in hypochondriac and lumbar regions.

4 P. M.—Bisulphat. quin. grs. x. Some abdominal pain; cannot pass urine.

6 P. M.—Pulse 96, weak; temperature 101.2. Some straining sensation, but no evacuation from bowels; tenderness in left hypochondrium; ice-bladder.

8 P. M.—Bisulphat. quin. grs. x.

10 P. M.—Pulse 84, temperature 100.2. Vomited, once during the evening, about four ounces of brownish fluid. Morph. gr. $\frac{1}{10}$. About ℥ ij of brandy used in the milk injections through the day.

12 M.—Slept since 10 P. M. Retching again. Morph. gr. $\frac{1}{10}$.

26*th*, 2 A. M.—Pulse 84, temperature 99.6.

4 A. M.—Vomited a little.

6 A. M.—Pulse 92, temperature 100.4. Tongue dry, sleeps much; nausea as soon as the effect of morphia passes off; considerable infiltration of abdominal wall to left of wound, extending some distance posteriorly. Ice continued. Morph. gr. $\frac{1}{10}$.

8 A. M.—Bisulphat. quin. grs. x.

10 A. M.—Pulse 88, temperature 99.8. Nausea and retching. Morph. gr. $\frac{1}{10}$.

2 P. M.—Pulse 90, temperature 100.2; pulse weak. Vomited once some greenish material.

3.30 P. M.—Morph. gr. $\frac{1}{10}$.

4 P. M.—Quin. bisulph. grs. x.

6 P. M.—Pulse 92, temperature 100.4.

8 P. M.—Quin. bisulph. grs. x., morph. gr. $\frac{1}{8}$.

10 P. M.—Pulse 100, small; temperature 99.6. Faint.

12 M.—Slight retching. Morph. gr. $\frac{1}{8}$.

27*th*, 2 A. M.—Pulse 92, temperature 99.8. Slept quietly. Bisulph. quin. grs. x.

4 A. M.—Morph. gr. $\frac{1}{8}$.

6 A. M.—Pulse 92, temperature 100. Nausea, tenesmus. Morph. gr. $\frac{1}{8}$.

10 A. M.—Pulse 98, temperature 100. Quin. bisulph. grs. x. Enema of Leube's meat solution (substituted henceforth for

beef-tea) ℥j with water ℥iv, and alternated with milk ℥vj. Morph. gr. $\frac{1}{8}$. Tongue dry. Infiltration in left hypochondrium and lumbar region more extensive and marked; tenderness on pressure confined to this part of the abdomen, tympanites general, slight erysipelatous redness over abdomen, enemata retained, thirst. Acid muriat. in water, small quantities by mouth.

12 M.—Morph. gr. $\frac{1}{8}$ with beef-solution.

1 P. M.—Retching. Morph. gr. $\frac{1}{8}$.

3 P. M.—Pulse 90, temperature 99.8. Morph. gr. $\frac{1}{8}$, quin. grs. x.

7 P. M.—Pulse 100, temperature 100.2. Morph. gr. $\frac{1}{6}$.

10 P. M.—Pulse 96, temperature 100.7.

28*th*, 4 A. M.—Pulse 96, temperature 99. Quin. grs. x, morph. gr. $\frac{1}{8}$. Slept all night; some retching.

8 A. M.—Pulse 100, temperature 99.4. Quin. grs. x, morph. gr. $\frac{1}{8}$. Erysipelatous redness and infiltration extend posteriorly. Carlsbad pin and the two silk ligatures uniting the abdominal wound, also five of the eight silks from the fistula, removed.

2 P. M.—Morph. gr. $\frac{1}{6}$.

4 P. M.—Violent retching, soon relieved. Quin. grs. x, morph. gr. $\frac{1}{8}$ by enema.

6 P. M.—Pulse 78, temperature 99.3. Some pus can be pressed from the lower part of abdominal wound. Tympanites not quite so much; tongue moist.

10 P. M.—Pulse 80, temperature 98.8. Quin. grs. x, morph. gr. $\frac{1}{8}$.

29*th*, 1 A. M.—Morph. gr. $\frac{1}{6}$.

3 A. M.—Pulse 70, temperature 99. Sleeps quietly, head rather cool. Quin. grs. x.

5 A. M.—Morph. gr. $\frac{1}{6}$.

7 A. M.—Pulse 76, temperature 99. Morph. gr. $\frac{1}{6}$ in enema.

9 A. M.—Morph. gr. $\frac{1}{6}$.

11 A. M.—Quin. grs. x, morph. gr. $\frac{1}{8}$ in enema.

1 P. M.—Pulse 72, temperature 99. Morph. gr. $\frac{1}{10}$. Large evacuations of thin, yellow, fecal material, accompanied with escape of gas, odor very offensive; vomiting a little at the same time, no pain. The sensation of weight and tenesmus greatly relieved, tympanites less.

3 P. M.—Quin. grs. x, morph. gr. $\frac{1}{6}$ in enema.

5 P. M.—Pulse 68, temperature 99. Stomach washed out through fistula with a mild solution in water of bicarb. sod. Small quantity of Leube's meat-solution introduced through fistula. Morph. gr. $\frac{1}{6}$.

10 P. M.—Bowels moved again, same character of passages, a little vomiting.

11 P. M.—Morph. gr. $\frac{1}{6}$ in enema.

30*th*, 3 A. M.—Pulse 78, temperature 98.4. Tenesmus again. Quin. grs. x, morph. gr. $\frac{1}{6}$.

9 A. M.—Pulse 80, temperature 99. Quin. grs. x, morph. $\frac{1}{8}$ in enema. Erysipelas extends over the back, left side, and downward toward left thigh. Feels somewhat soft; elastic. Exploring needle brings no liquid.

3 P. M.—Pulse 96, temperature 102.3. Morph. gr. $\frac{1}{6}$ in enema at 1, now subcutaneously; bisulph. quin. grs. x.

5 P. M.—Pulse 100, temperature 102.9.

9 P. M.—Pulse 98, temperature 102. Bowels moved at 6 P. M. Fæces yellow, offensive. Morph. gr. $\frac{1}{6}$ at 6 P. M., at 10 P. M., at 11 P. M. Quin. grs. x.

May 1*st*, 1 A. M.—Pulse 96, temperature 102. Bowels moved again. Morph. gr. $\frac{1}{6}$. Mouth very dry.

5 A. M.—Pulse 100, temperature 103.2. Evacuation of bowels. No tympanites. Quin. grs. x, morph. $\frac{1}{8}$ in enema.

8 A. M.—Pulse 100, temperature 102. Slight chills.

10 A. M.—Considerable puffiness, and some sensation of elasticity, or fluctuation, over left half of the abdomen and renal region. Two exploring punctures without result. Restless. Morph. gr. $\frac{1}{6}$.

5 P. M.—Pulse 88, temperature 102.7. Stomach washed out again; Leube into stomach, does not appear to be retained. Fluids taken by the mouth rush through fistula. Incision about four inches to the left of fistula through skin and muscle down to fascia transversalis. Some little hæmorrhage. Discharge of pus partly thin and offensive, partly laudable. Injections of carbolic acid and water frequently repeated. Distinct communication of new incision with original wound, which meanwhile has reopened completely, and with fistula running upward and backward. Quin. grs. x, morph. gr. $\frac{1}{6}$.

2*d*, 2 A. M.—But little pus, not of bad quality; thirst.

6 A. M.—Pulse 94, temperature 101.3. Bowels moved.

8 A. M.—Quin. grs. x, morph. gr. $\frac{1}{8}$.

10 A. M.—Pulse 94, temperature 101.5.

12 M.—Morph. gr. $\frac{1}{6}$.

2 P. M.—Quin. grs. x.

5 P. M.—Since yesterday, in spite of reduction of temperature, and the complete retention, in the rectum, of the injected meat-solution and milk, the general condition of the patient is decidedly worse. Pulse small, features haggard, expression of collapse; skin cool, veins unusually visible. Transfusion of four or five ounces of defibrinated blood from the arm of the house-physician, Dr. Froelich, into the median basilic of the patient. No very visible effects, except on the features, which look less haggard.

6 P. M.—Pulse 100, temperature 103.8. Face has a cyanotic hue, respiration becomes labored.

8 P. M.—Temperature, 106.3. Profuse perspiration, hands cold, mouth dry, pulse hardly perceptible. Consciousness unimpaired.

9 P. M.—After brandy-and-milk injection, pulse 108, temperature 104.5. Respiration labored and hurried, 48 a minute, extremities cold. Perspiration still profuse.

12 M.—Temperature 102.5, pulse perceptible, but cannot be counted.

3*d*, 2 A. M.—Quinia, grs. x, and beef-solution injected, but not retained—the first time they are expelled.

4 A. M.—Temperature 105, pulse innumerable, great dyspnœa, consciousness intact. Enema of milk-and-brandy retained.

6 A. M.—Died very quietly.

The *post-mortem* examination could not be extended beyond the abdominal cavity. The blood-vessels of the mesentery and the peritonæum, especially of the left side, and particularly on intestine, greatly dilated, but no effusion, no liquid of any kind in the abdominal cavity, no adhesions whatever between any portion of the peritonæum, except around the wound of the abdominal wall and the fistula. The stomach was opened one inch and a half from the pylorus, midway between the small and large curvature; closely attached and adhering over a surface from a quarter to half an inch, to the peritonæum of the abdominal wall. Two tiers of fistulous openings extended from the original wound to the left, in the direction of, and beyond the counter-opening at the side of the abdomen; one in the subcutaneous tissue, the other between muscles and transversalis.

As epicritical remarks, I should offer the following: The operation was not a difficult one to perform.

The patient, it is true, had been sick for a very long time, thirteen years, but had always shown and again exhibited a wonderful vitality.

She was not reduced to such a degree as many of the other fourteen cases which I shall have to mention. Thus she had fair chances, not to outlive her sickness, but to enjoy the taking and assimilation of food, and to die of gradual exhaustion, rather than of hunger and thirst.

The first days after the operation were favorable. Little fever, moderate erysipelas, both passing by.

Rectum in excellent condition, every injection being retained.

On and after the sixth day a new fever, from purulent infiltration of subcutaneous and muscular tissue, commencing, no doubt, in the original wound.

The impaired condition dates from that fact and that day.

Could septicæmia have been prevented? Possibly. I have remarked that the handle of the scalpel was used more than the knife in penetrating the tissues outside the fascia transversalis. This is safer, as far as hæmorrhage is concerned, but it may tear more tissue than a knife cuts, and thereby the possibility of infiltration may be enhanced. This, however, is not all. I believe it doubtful if carbolic-acid applications from the beginning would have prevented untoward occurrences; but what is hardly doubtful to me is, that the firm closure of the external wound has proved injurious. I mentioned that for that purpose I employed a Carlsbad pin and two sutures besides, which were removed on the fifth day. Below this firm cover, through which liquids could not escape, serum, or drops of liquid running down from the stomach, would decompose and give rise to all the dangers described above. Besides, the mass of the stomach, sewed fast in the longitudinal straight wound of the abdominal wall, caused the abdominal wall, particularly the peritonæum and the skin, to be thrown up in a fold, again facilitating irregularities in the course of the healing process, giving rise to a little liquid being stowed away. Therefore, in my next operation, I propose to attach the stomach firmly all round the wound of the peritonæum and the corresponding portion of muscle and integument, but to leave the external wound open, and subject to antiseptic treatment.

I consider this point of great weight in the further development of this important operation; it may serve as a further illustration of the chances for good lying hidden in every failure. The fourteen cases of gastrotomy performed for the same reason as mine—two French, one Danish, nine English, one German, and one American—yield a very interesting contribution to this subject. It is a brief history, and briefly told.

After John Watson and Ch. A. Egeberg (1839) and others had already proposed gastrotomy for œsophageal stricture, Sedillot, professor in Strasbourg, presented, in July and November, 1843, to the Académie des Sciences of Paris two papers, in which he proposed that operation for the purpose of introducing food into the stomach in all those cases in which a stricture of the œsophagus rendered the normal introduction of food impossible. He insisted upon the fact that death was certain in all of these cases; that the patients, suffering from hunger and still more from thirst, were always anxious to undergo any operation undertaken in their interest. Leroy d'Etiolles introduced an ivory ring into an œsophageal stricture; it gave rise to such serious symptoms as to necessitate œsophagotomy. Taranget performed œsophagotomy for the same purpose, prolonging life about sixteen months. But even œsophagotomy is an impossibility whenever the stricture is located below the cricoid cartilage. Sedillot referred also to the success attending the experiments of Blondlot, who was the first to establish gastric fistulæ in the animal, and to those cases in which fistulæ of the stomach resulted from accidents, or from an operation undertaken for the purpose of removing foreign bodies.

His first operation[1] was performed on November 13, 1849, under chloroform, on a man of fifty-two years, who had suffered from stricture of the œsophagus for a year past. Incision crucial, under the ensiform process, to the left, through skin, subcutaneous tissue, muscle, fascia, and peritonæum. The stomach, after the omentum had been pushed aside, was drawn out and punctured. The aperture was filled with a tube, consisting of two grooved halves armed with prominences destined to retain the stomach *in situ.* An elastic sound was introduced through this tube, and the whole apparatus fastened outside. The stomach was then replaced in the abdominal cavity, but sank to an unexpected distance, drawing the tube after it to a considerable extent. After some hours chicken-broth was injected, but part of it flowed out again. The patient slept till midnight, grew feverish, and died at 7 A. M. In the abdomen reddish serum, ecchymoses round the wound of peritonæum, omentum slightly reddened and ecchymotic. Aperture of stomach near cardia also surrounded by ecchymoses; two hundred grammes of a greenish liquid in the stomach. On a level with the sixth rib, there was an epithelioma of the œsophagus, causing the stricture.

In regard to the cause of death, the opinions differed greatly. The influence of chloroform, the debility of the patient, compression of the pneumogastric nerve in the tumor, the entrance of air into the abdominal cavity, were equally held responsible. Besides, Sedillot resolved to improve the method of operating in two points, firstly, by sewing the stomach to the integuments; secondly, by avoiding injections into the stomach.

He performed his second operation, January 20, 1853, on a man of fifty-eight years.[2] Incision as in his first case. The stomach was drawn out by means of pincers, and six sutures introduced through peritoneal and muscular layers of the stomach, and attached to the integuments, so that the stomach covered the wound from inside. The stomach was not to be opened until sufficient adhesions between the two peritoneal layers had formed. An hour afterward the patient had a severe attack of coughing, part of the sutures tore through, and the stomach escaped. Sedillot drew it out again and held it to the abdominal wall with his pincers, which were tightly closed. Next day fever, inflammation of wound, and diarrhœa. Leeches, injections of opium into the rectum, and leeches again. On January 25th, gangrene round the wound, pincettes and sutures removed, adhesions formed. A greenish fluid flowed out of the stomach; abdomen not large nor painful. Wine and beef-broth injections into the stomach, through a tube closed by a cork. Fever on the 27th, filiform pulse and chills on the 28th. Death on the 30th. There were pus in the abdominal cavity, and recent adhesions between omentum and intestines. Stomach firmly adhering to the peritonæum of the abdominal wall. The aperture two centimetres wide, one long, in the centre of the anterior wall. Liver large, lungs adhering, old tubercles. Cancerous tumor in œsophagus, at and below sixth cervical vertebra.

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[1] *Gazette de Strassbourg*, 1849, No. 12.

[2] *Gazette de Strassbourg*, 1853, No. 3; *Union Méd.*, March 31, 1853; *Gazette des Hôp.*, April 2 and 5, 1853.

E. Fenger's patient[1] was a man of fifty-five years. His premonitory symptoms had not lasted more than three months, the first being pain in deglutition. Ten days after the first symptoms, he was unable to take solid food. The stricture, thirteen inches behind the teeth, was cancerous. No manifestations of the disease anywhere. Some infiltration (inflammatory) in the apices of both lungs. The operation was performed under chloroform, March 23, 1853. The incision was made from the point of sternum downward and to the left, along the margin of the costal cartilage. On the same day oatmeal-gruel, and some time after milk, were poured into the stomach through a funnel; death after fifty-eight hours. At the *post-mortem* examination, close attachment, but no adhesion was found between the stomach and abdominal wall. Very little peritonitis. The aperture was two and a half inches from the cardia to the right, near the large curvature.

J. Cooper Forster operated twice. His first case[2] was a man of forty-seven years, who suffered from epithelioma of the œsophagus, about the level of the manubrium sterni, and was first subjected to tracheotomy, which did not relieve his dyspnœa, and to gastrotomy, on March 26, 1856. He died near the end of the second day. No peritonitis. Tubercles and emphysema in the lung.

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[1] *Virchow's Archiv*, vi., 1854.

[2] S. O. Habershon in "Guy's Hospital Reports," third series, iv., 1858.

His second operation[1] was on a boy of four years and four months, for corrosive cicatrization. It was performed, in 1859, under chloroform. He was fed with milk, eggs, and wine hourly, and died on the fourth day, of recent peritonitis. Although the aperture was not too near the cardia, the sutures had torn through, and foreign substances were found in the abdomen.

Sidney Jones's first case[2] was a woman of forty-four years. Deglutition and breathing had been difficult since July, 1858; tracheotomy was performed on February 10, 1859; in May an elastic tube of No. 12 could no longer be passed; no food entered the stomach after the beginning of June, so that she was fed by enemata for five or six weeks. Gastrotomy was performed on July 14, 1859. The incision was vertical downward from the cartilage between the eighth and ninth ribs, the stomach fastened by five or six silk ligatures; milk-and-brandy were introduced into the stomach every two hours, and a good deal of retching experienced. She died thirty-six hours after operation. Aperture midway between pyloric and cardiac ends, and between small and large curvatures. Stomach adherent to abdominal wall. No peritonitis. The only cancerous deposit found in the body was from the pharynx down to the cricoid cartilage.

He also operated[3] on a man of sixty-one years, whose first symptoms—dysphagia and vomiting—dated from the 20th of May, 1866, and in whom the sound did not pass the cardia on the 22d of September.

After the operation, brandy, egg, and milk, were introduced into the stomach directly through a tube which was not left in the stomach, but introduced for that purpose every two hours, or a little less frequently, after the fifth day. Beef-tea was added after some time. Pulse ranged for a long time from 60–78, temperature from 98–100. Two of his sutures were removed on the 1st of October; some pus followed their removal. He died on the 3d, or the eleventh day, of pneumonia; gray hepatization being found in the right lower, red hepatization in the left lower lobe. Opposite the first and second dorsal vertebræ was a hard tumor, scirrhous and encephaloid, involving the wall of the œsophagus and encroaching upon, but not ulcerating, the mucous membrane. The canal very narrow and tortuous. In the left kidney an encephaloid deposit.

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[1] "Guy's Hospital Reports," third series, v., 1859.

[2] "Transactions Pathological Society," xi.

[3] *Lancet*, Dec. 15, 1866.

Curling's case[1] was in a man of fifty-seven years, who had suffered but four weeks when admitted on January 30, 1866. Emaciation rapid. Operation March 31, 1866, under ether. Incision three inches long, vertically downward from the end of the seventh rib. Stomach fastened with five stout silk sutures. Milk was injected after the operation, and gave pain which required morphia. Enemata were retained; no vomiting. Death after thirty-two hours, of exhaustion. Opening on great curvature close to cardiac end. One of the upper sutures had ulcerated out. Tissues around the incision discolored, blood extravasated into them. The tumor was an epithelioma which approached to colloid in the deeper layers, six inches below glottis. Besides, there were emphysema, fatty heart, atheromatous aorta and arteries, soft muscles.

Von Thadeu's patient[2] was a woman of fifty-four years, suffering from epithelioma, located about two inches above the cardia. Dysphagia had lasted a year, vomiting after some time, no pain. Injections of food into the rectum did not sustain her. Operation (1867) under chloroform. Incision three inches long, from the ensiform process downward and to the left, near the margin of cartilages. Three arteries were ligated; four sutures fastened the stomach to the lower angle of wound. The upper portion of external wound was united by nine sutures; the incision into the stomach, however, postponed till the next morning. After the operation, pain, in spite of morphia, and vomiting of acid fluids.

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[1] "London Hospital Reports," iii.

[2] Scharffenberg: "Dissertatio inauguralis de gastrotomia propter œsophagi stenosin instituta, Kiliæ, 1867.—Schmidt's Jahrb., 136.

Abdomen sunk, wound drawn in, funnel-like. The stomach was finally drawn up by the sutures and incised, the mucous membrane fastened by two sutures. Injections of beef-broth through a thin elastic catheter, repeated several times. No pain. Next morning two movements of the bowels. Temperature elevated; pulse accelerated; death forty-seven hours after the operation. The inner opening of stomach was but of the size of a pea, near the pylorus. Very little peritonitis, and only near the wound.

Francis Troup's[1] patient was a man of fifty years. The preceding symptoms were loss of appetite, gnawing pain, dysphagia, vomiting, thirst; the stricture resulted from the presence of an epitheliomatous mass at the cardiac end. He operated (1867) by a straight incision, three inches long, midway between middle line and costal cartilage, and inserted a tracheotomy-tube, through which milk and stimulants were introduced for three days—death on the fourth. The opening was found in the middle of the anterior wall of stomach. Adhesion partially perfect. No peritonitis.

Durham's case[2] was in a man of seventy years, without any hereditary disposition, suffering from an epithelioma above the level of bifurcation, with a slit-like ulceration into the trachea. He was admitted August 19, 1868, after having had a constant desire to expectorate for many months, and vomiting since June. After September 10th he swallowed nothing, and the operation was performed on the 15th. Incision of three inches from the cartilage of eighth and ninth ribs, so that the outer border of the rectus muscle was just seen. The opening was near the large curvature, and near the cardia, the stomach fastened with silk. On incising, and in introducing milk into the stomach, a dragging pain was experienced. Death, sixteen hours after operation.

Maury's patient[3] was a man of twenty-five years, with a history of indurated chancre and buboes at the age of seventeen years. On the 17th of May, 1868, he was suddenly seized with a choking sensation and a violent fit of vomiting. These paroxysms soon returned almost daily. In July a stricture was discovered near the cardiac orifice. A sound could be passed but once. No pain. In April, 1869, confined to bed through weakness; rallied after a few weeks, but again sank. Could not swallow any thing about the middle of May, and was sustained by beef-extract and milk-punch injections, which were mostly retained. Complains more of hunger than of thirst. Operation June 25, 1869, under chloroform. Incision curvilinear, convexity toward median line from sternal extremity of seventh intercostal space, down and outward for four inches. Rectus muscle, fascia transversalis, and peritonæum having been divided, the stomach was incised near pylorus, and fastened with numerous silver sutures. A tube was inserted at once, and beef-tea frequently injected. He commenced to sink soon after the operation, and died after twelve hours. "There was a close, firm stricture of the œsophagus just within its cardiac orifice, which produced such complete obliteration of its calibre as scarcely to admit of the passage of a probe. No evidence of ulceration; stomach contracted, empty, and healthy. The opening made was about two inches from pyloric valve. No tension or strain upon the sutures. Microscopical examination revealed that much, that the tumor was probably not cancerous."

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[1] *Edinburgh Medical Journal*, July, 1872.

[2] "Guy's Hospital Reports," third series, xiv., 1869.

[3] *American Journal of Medical Sciences*, April, 1870.

[TO BE CONCLUDED IN NEXT NUMBER.]

ART. III.—*Clinical Report of the Lying-in Service at Bellevue Hospital, for the Year* 1873. By WM. T. LUSK, M. D., Professor of Obstetrics and Diseases of Children in Bellevue Hospital Medical College.

As a large amount of misconception, both on the part of the profession and the public, prevails concerning the lying-in wards of Bellevue Hospital, it has been thought good by the writer to present an accurate tabular history of the service for the year ending January 1, 1874.

The year in question has been chosen, not because of the peculiarly favorable exhibit it presents, but because, during the entire period, a complete record was kept of every woman confined in the hospital, from the time of delivery to that of her death or discharge.

These records show a total of 449 patients, twenty-one of which were confined outside, and afterward brought to the hospital. The annual mortality was twenty-five, or in the proportion of one to eighteen. The number of confinements, of primiparous labors, and deaths for each month, is given in Table I.

TABLE I.

MONTHS.	Confinements each Month.	No. of Primiparæ each Month.	No. of Deaths each Month.
January	33	14	2
February	30	13	4
March	38	26	3
April	28	9	1
May	41	17	1
June	41	18	..
July	30	17	..
August	42	24	1
September	45	15	3
October	33	14	3
November	42	16	3
December	46	26	4
Total	449	209	25

In comparison with the above, the records from 1865 to 1872 inclusive report the deaths for each year at 17, 30, 9, 24 (no report for 1869), 31, 33, and 16. Thus it will be seen that the year 1873 was not an exceptionally good one. The increased mortality in 1870 and 1871 is attributable to the closure of Charity Hospital to this class of cases in 1870, on account of its having been visited by a severe epidemic of puerperal fever. This closure largely increased the number of patients seeking admission to Bellevue Hospital, and at the same time the actual, though not the relative mortality. As is usually the case, however, the mortality was greater in 1871, the year following the overcrowding, than in 1870.

The year 1872 witnessed but sixteen deaths. Of these, two cases died of convulsions, one of paralysis, two of phthisis, one of puerperal hæmorrhage, one of Bright's disease, and one of peritonitis developed outside the hospital, leaving thus a total of eight cases referable to peritonitis or some form of puerperal fever, for which the hospital may be held responsible.

TABLE II.—TOTAL NUMBER OF DEATHS IN BELLEVUE HOSPITAL, FROM PUERPERAL CAUSES, DURING THE YEAR 1873.

Number.	Date.	Age.	Social Condition.	Number of Pregnancy.	Duration of Labor.		Character of Labor.	Cause of Death.	Remarks.
					First Stage. Hours.	Second Stage. Hours.			
1	Jan. 1.	17½	S.	1	14	2	Normal.	Peritonitis.	Annie S——. Suffered greatly from depression of spirits during pregnancy. Had been driven from her home in Michigan. Despondency increased after labor.
2	Jan. 11.	18	S.	1	$14\frac{30}{60}$	$2\frac{30}{60}$	Normal.	Uterine phlebitis.	Ellen H——. Mania on third day; died on the eleventh day; scarlatinous eruption.
3	Feb. 2.	24	S.	1	38	$7\frac{30}{60}$	Forceps.	Peritonitis.	Frances S——. Forceps; fever second day; died Feb. 11th.
4	Feb. 21.	29	S.	1	7	$1\frac{30}{60}$	Normal.	Erysipelas and infarction of lung.	Jane L——. Erysipelas of breast on fourth day; died March 5th.
5	Feb. 28.	21	W.	1	43	$4\frac{50}{60}$	Normal.	Peritonitis.	Adelaide B——. Labor began February 28, ended March 2d; died March 10th.
6	Feb. —	..	..	..	....	....	....	Peritonitis.	Bella A——. Delivered outside; sent to hospital with peritonitis; died in a medical ward on the second day after admission.
7	Mar. 6.	22	S.	1	23	8	Forceps.	Peritonitis.	Lizzie B——. Forceps applied within cervix; died March 28th.
8	Mar. 8.	23	S.	2	....	....	Forceps.	Uræmia.	Bridget F——. Barnes's dilators; forceps; twin pregnancy; forceps with second child; œdema and albuminuria during pregnancy. A number of convulsions before confinement, two after confinement. Died April 2d.
9	Mar. —	..	..	..	....	....	....	Peritonitis.	Mary T——. Delivered in station-house and sent to hospital. Died in medical ward thirteen days after admission.
10	April 6.	26	S.	1	5	$3\frac{30}{60}$	Normal.	Pneumonia.	Hannah P——. Hæmorrhage from varicose veins; mania on third day; sent to cells; pneumonia from window of cells being broken by delirious patient confined in the same cell.
11	May 11.	35	S.	2	$11\frac{30}{60}$	$2\frac{50}{60}$	Normal.	Peritonitis.	Betsey K——. Twin pregnancy.
12	Aug. 26.	30	S.	1	20	$17\frac{15}{60}$	Forceps.	Peritonitis.	Mary G——. Forceps applied within cervix.
13	Sep. 21.	32	M.	9	$6\frac{45}{60}$	9	Artificial.	Rupt. of Uterus.	Hannah H——. Sudden spontaneous rupture of uterus during labor. Collapse.
14	Sep. 21.	22	S.	1	$17\frac{30}{60}$	$1\frac{40}{60}$	Normal.	Peritonitis.	Jenny T——. Witnessed the sudden death of case No. 13.
15	Sep. 29.	27	S.	1	6	$1\frac{30}{60}$	Normal.	Peritonitis.	Annie S——.
16	Oct. —	19	S.	1	....	....	....	Cerebral embolism.	Mary C——. Brought into hospital twenty-two days after confinement. Had rheumatism, vegetation on mitral valve, and hemiplegia.
17	Oct. 18.	21	S.	1	....	....	....	Convulsions.	Ellen McC——. Uræmic peritonitis.
18	Oct. 26.	24	M.	4	$14\frac{30}{60}$	$0\frac{30}{60}$	....	Phthisis.	Laura B——. Brought in moribund. Died shortly after delivery.
19	Nov. 2.	38	M.	5	6 days	....	Artificial.	Rupt. of Uterus.	Mary C——. Brought in from a private lying-in asylum in a state of collapse, after six days of labor. Rupture of uterus. Putrid child extracted.
20	Nov. —	18	S.	1	54	....	Forceps.	Exhaustion.	Kate G——. Died on fourth day.
21	Nov. 10.	33	M.	9	$49\frac{10}{60}$	$0\frac{5}{60}$	Normal.	Puerperal fever.	Kate McC——. Died seven days after confinement.
22	Dec. 2.	28	M.	1	10	$5\frac{50}{60}$	Forceps.	Uterine phlebitis.	Fannie G——. Died January 2, 1874.
23	Dec. 6.	25	S.	2	....	....	....	....	Agnes C——. Intense mental depression and anxiety. Chill on fifth day. Died on twelfth day.
24	Dec. 25.	25	M.	2	....	....	....	Phthisis.	Mary H——. Died five days after confinement.
25	Dec. 13.	36	S.	1	$14\frac{45}{60}$	$12\frac{45}{60}$	Forceps.	Septicæmia.	Bridget B——. Speculum examination showed entire vagina to be covered with diphtheritic patches. Died twelve days after confinement.

An analysis of the twenty-five deaths occurring in 1873 shows that two women died from puerperal convulsions, two from rupture of the uterus (one of the patients was brought into hospital in a dying condition), two from phthisis, one from pneumonia, one from cerebral embolism (patient brought into hospital twenty-two days after confinement, from street), and two cases of peritonitis consecutive to labor, and developed before admission. In estimating the influence of the hospital in developing disease, these ten cases may be left out as having no bearing upon the question. There remain, then, fifteen cases illustrating puerperal inflammations, or some form of blood-poisoning, i. e., about one to thirty. Of the fifteen, twelve were primiparæ, of whom six were delivered by forceps, after labors of long duration. In three instances the operations were performed by *internes*, or members of the house-staff, and in two of these the application of the forceps was made within the cervix, before dilatation was completed, i. e., under circumstances requiring the utmost skill and prudence.

Death in one instance was due mainly to excessive mental depression on the part of the patient, who had been driven from her home in Michigan, and who felt herself an outcast without hope, and without a future.

Of the three pluriparæ, one suffered intense remorse at having become the mother of a second illegitimate child; another died after giving birth to twins; the third gave birth to her ninth child after a labor lasting forty-nine hours.

Numbers 21 and 22 (*see* Table II.) were the only women in the fifteen designated who claimed to be married. Now, the entire number of married women confined during the year was 240. *Thus, the number of deaths from puerperal disease, among the class who furnish the statistics of civil practice, furnished in the hospital a mortality of less than one per cent.*

In striking contrast with the above are the thirteen deaths among the unmarried, of whom there were 209 all told. Thus, among women whose children were born out of wedlock, the death-rate rose to five and a half per cent. The exact reason for this difference is not very apparent. That it was not entirely due to mental depression is probable from the fact that during three summer months—from the last of May to the last of August—there were no deaths, though during that period fifty-seven unmarried women were confined. The excess of primiparous labors among the unmarried likewise fails to explain the difficulty, as, among the married women, sixty-three were confined during the year for the first time, with the loss of but one life.

It may, however, be as well noticed here that while many of the patients who come to Bellevue Hospital are callous and indifferent, there are always certain among them who feel their position most keenly. Now, any depressing agency is a dangerous element in a lying-in-hospital. If, indeed, some means could be devised to provide a future for the better disposed among the unfortunates, and persons could be found to take a little humane interest in their welfare, a great addition would be made to the medical resources of the hospital. Few people realize the appalling mental condition of some of these poor outcasts. Without money, or friends, or sympathy—with the question of death, or a horrible career as an alternative, before them, it is difficult to keep under control the suicidal propensities of the more desperate. The writer has constantly his attention drawn to cases of peritonitis resulting from patients getting out of bed one or two days after confinement, and walking barefooted over cold, uncarpeted floors, when the nurse, for any reason, happened to be out of the room. In some of these cases the only impelling motive to the imprudence has been a knowledge that it is forbidden.

The table on the next page shows the total number of cases of puerperal disease from which the patients recovered.

Here, too, the preponderance of disease among the unmarried is very apparent (fourteen out of twenty-two). The cases of convulsions, the case of nephritis, and the two cases of puerperal mania, were accidental occurrences attributable mainly to the antecedents, and physical conditions of the patients who seek admittance to a great hospital.

While the hospital receives so large an amount of wretchedness, absolute immunity from puerperal disorders is unat-

TABLE III.—TOTAL NUMBER OF PUERPERAL AFFECTIONS OCCURRING IN BELLEVUE HOSPITAL, DURING THE YEAR 1873, FROM WHICH THE PATIENTS RECOVERED.

Number.	Date.	Age.	Social Condition.	Number of Pregnancy.	Duration of Labor.		Character of Labor.	Diseases.	Remarks.
					First Stage. Hours.	Second Stage. Hours.			
1	Jan. 1.	22	S.	1	23	$1\frac{30}{60}$	....	Cellulitis.	Mary H——.
2	Jan. 8.	20	M.	1	33	$7\frac{45}{60}$	....	Puerperal fever.	Lizzie A——.
3	....	....	M.	..	..	..	....	Puerperal fever.	—— W——. Delivered outside.
4	Jan. 16.	28	M.	6	14	$1\frac{50}{60}$	....	Cellulitis.	Mary D——. Child weighed eleven pounds.
5	March 1.	34	W.	8	$5\frac{30}{69}$	$0\frac{30}{60}$	....	Pelvic peritonitis.	Mary P——.
6	March 13.	28	S.	1	43	$1\frac{30}{60}$	....	Pelvic peritonitis.	Kate C——.
7	April 1.	20	M.	1	11	19	Forceps.	Convulsions.	Delia G——.
8	April 26.	24	S.	1	$24\frac{30}{60}$	$39\frac{30}{60}$	Forceps.	Pelvic cellulitis.	Mary H——.
9	May 20.	25	S.	2	$5\frac{30}{60}$	$3\frac{10}{60}$	....	Cellulitis.	Maria D——.
10	May 25.	22	S.	1	$6\frac{30}{60}$	$2\frac{30}{60}$	....	Acute nephritis.	Fannie M——.
11	May 28.	25	S.	1	$13\frac{30}{60}$	$3\frac{30}{60}$	....	Pelvic peritonitis.	Agnes M——. Delivered outside.
12	May 30.	25	M.	2	14	$0\frac{30}{60}$	....	Pelvic peritonitis.	Annie M——. Delivered outside.
13	June 20.	21	S.	2	11	$0\frac{30}{60}$	....	Puerperal mania.	Pauline S——. Became delirious on the 10th of July, and taken home by friends on the 18th, improved.
14	July 28.	18	S.	1	$22\frac{30}{60}$	$1\frac{45}{60}$	....	Pelvic peritonitis.	Annie C——.
15	Aug. 2.	18	S.	1	$14\frac{30}{60}$	$0\frac{30}{60}$	....	Cellulitis.	Kate E——.
16	Aug. 18.	29	M.	2	$1\frac{45}{60}$	$1\frac{25}{60}$	....	Pelvic peritonitis.	Mary P——. Got out of bed, contrary to orders, soon after her confinement.
17	Sept. 29.	22	S.	2	$1\frac{30}{60}$	..	....	Pelvic abscess.	Margaret W——.
18	Oct. 18.	34	M.	13	$10\frac{35}{60}$	$0\frac{45}{60}$	....	Puerperal mania.	Ellen C——. Prisoner. Sent to hospital to be confined before serving her sentence.
19	Nov. —	18	S.	1	..		....	Pneumonia.	Pauline N——.
20	Nov. 27.	22	S.	1	$11\frac{30}{60}$	$1\frac{15}{60}$	....	Peritonitis.	Mary B——.
21	Dec. 24.	19	S.	1	55	$6\frac{42}{60}$	....	Peritonitis.	Mary Mc——.
22	....	34	M.	8	29	$0\frac{30}{60}$	....	Convulsions.	C. M——.

tainable. Even disastrous epidemics are liable to occur under most careful management. The occurrence of such epidemics does not demand the destruction of the hospitals in which they break out, but their temporary closure.

In Charity Hospital the present condition of the lying-in service is said to be excellent, yet in 1871 it had to be closed on account of puerperal fever. In 1872 there were twenty deaths out of 205 patients at the Nursery and Child's Hospital. The hospital was closed for the time, and the next year there were but four deaths from all causes among the women confined there. Over and over again operations have been suspended at the Woman's Hospital, on account of a temporarily unhealthy condition of the atmosphere.

But what are the means by which all this evil may be abated? It is folly to assume that no reform can be accomplished. Certainly it is unworthy a great city like this not to have a special hospital, separate from a general hospital, for the reception of lying-in patients. Such a hospital ought not to be an old rookery, purchased to meet an emergency, but should embody the practical results of the studies of the most eminent hygienists of the day. The selection of the site of such a hospital should be subordinated entirely to the interests of the patients. *But when this has been done it will be found that success lies chiefly in the internal economy practised.* An abundance of light and air, plenty of free space, generous diet, plenty of washing, a rigorous discipline maintained in the management, intelligent nursing, and constant watchfulness on the part of the attending physicians, are among the most important means of preventing and suppressing epidemics. *Per contra*, with limited room, ignorant nurses, and lax discipline, fatal results will prevail in spite of pavilions, or the most expensive machinery for ventilation.

Clinical Records from Private and Hospital Practice.

I.—*Morphine-Poisoning successfully treated by Atropia and Electricity.* By J. D. Trask, M. D., Astoria, L. I.

The following narrative of the successful treatment of a serious case of morphine-poisoning, of which I was personally the subject, seems to me to have a professional interest that renders it worthy of record.

On the morning of March 25th, on sitting down to breakfast at eight o'clock, I took, from a bottle of the size and general appearance of a one-ounce quinine-bottle, a powder which I believed to be sulphate of quinine. It was removed from the bottle upon the end of a breakfast-knife, the quantity estimated to be some six or seven grains, my only anxiety being to take a sufficiently large dose. It was stirred up in a little cold water, and at once swallowed upon an empty stomach. To a young lady visiting in the family, I also gave what I estimated to be three grains; and to my daughter, full grown, I gave somewhat less than two grains: both these had half finished breakfast.

Almost immediately after swallowing the dose, I became conscious of a certain amount of stimulating influence upon the brain, a sensation not unlike the early physiological effects of quinine, and remarked that I had never known quinine to act so promptly upon my system before; recalling to mind instances in which small doses were reported as having acted almost immediately upon patients. At the same time I became conscious of a peculiar sensation about the fauces, an idiosyncrasy which I have all my life observed as following the slightest application of morphine to the lips. Strange as it may seem, both these circumstances were disregarded, and, more than that, the young lady to whom I had given the larger dose read "Sulphate of Morphine" upon the label of the bottle from which the powder was being taken, without realizing its import. I ate very little breakfast. Occupied by morning duties, little notice was taken of the head-symptoms, of which I was all the time conscious, until my daughter remarked that she was suffering from nausea, as she always did after taking morphine. On accidentally overhearing this, and hastening to the breakfast-room, I read, to my dismay, upon the bottle, "Sulphate of Morphine."

By reference to the watch, I found just three-quarters of an hour had elapsed since the dose was swallowed. Realizing the gravity of the accident, I set about making such preparations as I knew to be necessary for the struggle for life that was to follow. From a scruple to a half-drachm of sulphate of zinc was immediately swallowed in solution, which very promptly produced a degree of nausea, but no vomiting. In a few minutes the dose was repeated with absolutely no effect. By this time the influence of the morphine had stolen over the whole system, and was felt especially in the lower extremities. I had sent for my friend Dr. Taylor, but before his arrival had injected into the arm thirty drops of a solution of atropine, of one grain to the ounce of water. The antagonistic influence of the atropia was almost instantaneously perceptible. The effects upon the brain and nervous system were so marked, that I could not refrain from expressing to my family my admiration of the action of the remedy. But, alas! this was of short duration. Probably within two or three minutes the morphine got the mastery, and I immediately injected thirty drops more of the atropia. The absorption was now going on rapidly. Dr. Taylor had by this time arrived, and, having injected another dose of atropia, urged the trial of mustard-and-water. A large quantity of this and of clear warm water was swallowed, and there was a very copious return of the emetic without a particle of food. The impression conveyed to me was that only the upper portion of the stomach contracted, and that the nerves of the lower portion, into which the morphine had been directly received, were paralyzed by its local action. Such partial action of the stomach, the emetic alone returning, is not uncommon, as we all know, when vomiting is sought to be excited for the removal of ingesta. No perceptible effect followed the later injections of atropia.

At my request, Dr. Taylor wrote for a fresh solution of atropine of two grains to the ounce, and we weighed out a portion from the morphine-bottle, which I judged to be about equal to the quantity taken, and found it to be fully six grains.

That the electro-magnetic machine might be in readiness when it should be required, I had it brought out. Fortunately it had been recently put in order, but the action of one cell was feeble. A second cell that was accidentally in my possession was brought to me, but much embarrassment was experienced in coupling them. It was almost impossible to keep the attention fixed, though stimulated by the apprehension that others might not understand the mode of connection of this particular instrument, and that a failure might be fatal to myself. It appears, however, that the necessary connections were correctly made. With the help of others, I now hunted up the case of morphine-poisoning described in the March number of the New York Medical Journal, with the idea that the mode of application of the electric current there adopted might furnish to those having the case in hand some useful suggestions. The last recollections are of returning to the instrument, under the impression that it was not acting, though it was in perfect operation, and, with a feeling of despondency and indifference, soon abandoning it. After a few walks about the first floor of the house, the inferior extremities doubling under at every step, and within a few minutes of leaving the instrument, absolute unconsciousness supervened. This occurred, as nearly as can be fixed, at ten o'clock. It is interesting to note here, how, under a vigorous exercise of the will in one direction, notwithstanding a most urgent desire to succumb to sleep, a quite efficient control of the intellectual faculties was retained to the very verge of complete unconsciousness.

On the supervention of unconsciousness, Dr. Taylor sent to the city for assistance, having made a subcutaneous injection of thirty minims of the two-grain solution of atropia. He also caused the free administration of brandy and of strong coffee, and I was kept walking, supported by relays of assistants, until all power of motion was gone, and this occurred about eleven o'clock. A short time before this, however, spontaneous vomiting occurred while standing erect, to a most profuse degree, directly after which Dr. Taylor injected thirty minims more of the two-grain solution.

At 11.45 Dr. A. A. Smith, of No. 38 East Twenty-ninth Street, New York, arrived, in the temporary absence of Dr.

Taylor, and, on seeing the gravity of the case, sent at once for additional counsel. To Dr. Smith's experience and skill in the use of the electric current, I feel that the successful result is in no small degree due. Dr. Smith has kindly furnished the following notes of the case as observed by him during the time of his stay:

"I saw Dr. Trask at 11.45 A. M. He was profoundly comatose; all efforts to arouse him did not avail. The skin was moist, the pulse 124, feeble and somewhat irregular; muscular power was completely gone; pupils moderately dilated (which I knew was due to the sulphate of atropia administered); respirations 13 and irregular. I was at once struck with the character of the respirations. The inspirations were scarcely perceptible, the expirations very long and given with a groan, certainly suggestive. The countenance was of a leaden hue.

"I asked for and obtained a battery (Kidder's make, two-celled, faradic current). The battery worked admirably. I applied the poles to the phrenics, one to each, just above the clavicles, at first with a weak current, gradually increasing it until it caused him to take a deep, spasmodic inspiration. I found that the strength required was such as gave me great pain when I held the sponges in my own hands. This was continued for about twenty minutes, when I began to stimulate him, giving teaspoonful doses, of equal parts, of brandy-and-water. The first spoonful he was unable to swallow. The battery was continued, also irritating the hands and feet, which soon caused some movements more than reflex.

"Within half an hour the pulse became less rapid and stronger, the countenance assumed less of the leaden hue. More brandy was offered, which produced a reflex action, and caused him to cough and inspire deeply afterward. He swallowed some of the brandy, and after this, brandy-and-water was given about every fifteen minutes, and the reflex action produced by the attempts at swallowing aided in the great indication of oxygenation of the blood.

"Dr. Taylor returned at about 12.15 P. M., and we agreed upon our line of treatment, viz., to keep up the influence of atropine, taking the pupils as our only guide, keeping them moderately dilated, stimulation, and the battery, not allowing the body to remain in one position more than fifteen or twenty minutes at a time; in this way guarding against pulmonary congestion and subsequent pneumonia. At 12.30 P. M., respiration was 14, perfectly comatose.

"At 2 P. M., Dr. Austin Flint saw him. The pulse was then 108, respiration 18; muscular movement was returning, and by great effort he was aroused and seemed to recognize Dr. Flint; previous to this the eyes had been two or three times opened, and he made efforts to talk. One pole of the battery was applied to the phrenic in the neck, and the other to the diaphragm, but this did not cause the spasmodic inspirations so well as when one pole was applied to each phrenic in the neck. We irritated the muscles by applying the poles to other parts of the body, as one to the brachial plexus, and the other to the forearm or hand, to the chest, abdomen, etc. The feet and hands were constantly irritated. I left the doctor at 4.10 P. M., and by great effort succeeded in getting him to shake hands on parting.

"In two cases in which I have had the opportunity of observing the antidotal effects of sulphate of atropia in opium-poisoning, I was led to conclude that from the one thirty-second to one twenty-fourth grain of atropia counteracted the effects of a grain of morphine."

About the time of Dr. Smith's departure, active delirium began to manifest itself whenever aroused from stupor, the brain being occupied with the idea of driving horses, etc., this excitement being soon followed by a relapse into stupor. This was repeated as often as the patient was aroused, and continued unabated until about 6 P. M., gradually subsiding to about 8 P. M., when this delirium disappeared. During this period, from 4 to 8 P. M., I have distinct recollections of being highly incensed at the means taken to prevent sleep; the act of swallowing was also very difficult and irksome. I was distressed, during these brief periods of consciousness, by the impression that I had become insane, and that the watchfulness of friends was due to this. As the delirium subsided there was constant picking at objects seen in the air or lying around. From 7 to 10 P. M., almost continuous efforts of friends were required to keep me awake, notwithstanding there was a decided desire to engage in conversation. By 12 P. M., I was able to relate to a medical friend quite a lengthy medical case without once losing the thread of the story. Directly after this I was allowed to go to bed. Sleep was much broken, the intellect wandering. During the following day the distinctive symptoms of atropia-poisoning were very marked. There was a degree of indistinctness of vision, a heaviness of the eyelids that rendered it difficult to keep them open, and visions of beautiful scenery and brilliant colors, with grave and fantastic figures of human beings, immediately upon the eyelids being closed. There was also a continued sense of weariness, as well as a very disagreeable viscidity of the fauces that rendered swallowing irksome. All these symptoms disappeared suddenly after a refreshing sleep in the evening. I feel certain that all the symptoms due to the morphine disappeared by 12 o'clock, or sixteen hours after the morphine was swallowed, and that the influence of the atropia upon the cerebrum lasted at least about eighteen hours longer. There was a copious alvine dejection on the following day, and also very free diuresis on the evening of the accident, and during at least twenty hours after the atropic symptoms above described had passed away, both due unquestionably to the atropia. Subsequently there was extreme torpor of the bowels. A very marked prostration of the nervous system followed this accident. For two or three days the digestive system participated to a degree, rendering care necessary in the selection of food, and the frequency with which it was taken. The appetite soon became excellent, and abundant nourishment and stimulus were taken with very little increase in general strength. The nerves of animal life seemed to have suffered a violent shock, from which they were slow to rally. At the end of two and a half weeks, there having been but little gain, a sea-trip was advised, and a two weeks' absence in cheerful travel perfected convalescence.

This case is interesting as one of recovery from a dose of morphine abundantly sufficient to destroy life, and there can be no doubt that the agents employed determined the favorable result. The morphine had been taken suspended in water, of which also a sufficient amount was immediately afterward taken to secure solution in the stomach—the stomach, moreover, being empty; and but a very small quantity of food was afterward swallowed. The morphine lay undisturbed in the stomach certainly until after the mustard-emetic took effect, a period of at least an hour and a quarter, and it is questionable if any of the morphine was ejected even by the action of the emetic. It is certain that a sufficient amount of morphine was absorbed to induce a very dangerous degree of narcotism.

The antagonistic influence of atropia was here very plainly proved. The recognized influence of the first dose in clearing up the mental faculties has already been referred to; and, though this was almost immediately overcome by the advancing narcotism, there can be no question that, through it and subsequent doses, the system throughout the narcotism was under the influence of the atropia also. This was shown by the dilated condition of the pupil throughout the day, and the early supervention of delirium. The atropia must, therefore, have been somewhat in excess of the morphia. Moreover, the symptoms of atropia-poisoning survived those of morphine by about eighteen hours; but this might have been simply due to the longer duration of the action of atropia on the human system. The duration of the more profound stage of narcotism was also much less than if the morphine had been left to its undisputed influence on the system. I think it must be a very unusual circumstance for the coma, etc., to subside so soon. This case thus affords additional confirmation of the antagonistic influence of these two agents; and, that such confirmation is even yet needed by the profession, is shown by the skepticism that still prevails with many on this point; men eminent in the profession having, since this occurrence, assured me that they had hitherto had no confidence in such antidotal effects.

A very important question arises as to the antidotal equivalents of these two powerful agents. It is by no means a matter of indifference how much of the one may be employed in order to neutralize a given quantity of the other, for it is quite possible that the patient might be destroyed by the very agent used to save him.

There were introduced subcutaneously, in the present instance, in the aggregate, seven-sixteenths of a grain of atropia to counteract about six grains of morphine practically swallowed in solution, and remaining in the stomach at least one hour before the administration of the atropia was commenced. This is about one-fourteenth of a grain of atropia to one grain of morphine, and, from the effects of the repeated doses, the atropia was regarded, by those having charge of the case, as being in excess. Dr. A. A. Smith gives, as the result of two cases, his impression, that one grain of morphine is antagonized by one twenty-fourth to one thirty-second of a grain of atropia. Dr. S. Weir Mitchell, in a note with which he has favored me, states that he has given three one-third-grain injections of atropia in poisoning by four grains of morphine, and his patient recovered.

In the *American Journal of Medical Science*, July, 1865, Dr. S. Weir Mitchell and colleagues have published a highly instructive paper upon the antagonism of morphia and atropia in *medicinal* doses. They show that experiments upon animals subjected to the action of these poisons cannot be relied upon as indicating the operation of the same poisons upon the human system. Their extensive experiments upon the human subject demonstrate.

1. That while morphia, in medicinal doses, lowers the pulse slightly or not at all, atropia lowers it a few beats within ten minutes, and then raises it twenty to fifty beats within an hour. Morphia has no power to prevent atropia from depressing the pulse, so that as regards the *circulation* they do not counteract one another.

2. As regards the *eye* the two drugs are antagonistic.

3. The *cerebral symptoms* caused by either drug are, to a great extent, capable of being overcome by the other.

4. The nausea of morphine is not prevented or antagonized by belladonna.

In short, "as regards toxic effects upon the cerebral organs, the two agents are mutually antidotal, but this antagonism does not prevail throughout the whole range of their influence, so that in some respects they do not counteract one another, while, as concerns the bladder, both seem to affect it in a similar way." These gentlemen estimate that, as a general rule, one-fourth grain of morphine will neutralize for a time one-thirtieth of a grain of atropia, but the latter continues to act far longer than the former.

In the *American Journal of Medical Science* for July, 1866, p. 270, is reported an extremely interesting case of poisoning from the swallowing of a solution of one-sixth to one-fourth of a grain of atropia. The symptoms were extremely urgent, and, notwithstanding free venesection, five men were unable to restrain the patient. In ten minutes after the injection of one-fifth grain of acetate of morphine into the temple, he was perfectly quiet and remained so for about one hour, when the excitement began to return. Two hours after this, one-fourth grain of acetate of morphine was injected. In seven minutes perfect calm followed, and the patient recovered. Taking one-fifth grain of atropine as the average between one-fourth and one-sixth, this quantity was in this instance neutralized by nine-twentieths of a grain, or something less than a half grain, of morphia. In atropia-poisoning, a dose of morphine that will neutralize for a time the atropia may require to be repeated several times, from the longer duration of the action of the atropia.

If it be asked if the doses of the two drugs may be regarded, in cases of poisoning, as reciprocal, that is, if, as in one case just cited, one-fifth grain of morphine controlled for the time one-fifth grain of atropia, would one-fifth grain of atropia be required to control the effects of one-fifth grain of morphine? the answer must be, plainly, No; experience showing that a very much less amount would suffice. Again, if in this case the practitioner had looked for direction to the estimate of Dr. Mitchell and his colleagues, viz., of one-fourth grain of morphine to neutralize one-thirtieth grain of atropia, he would have felt called upon to increase sixfold the dose actually employed and proved to be sufficient. The difference of the mode of administration is, of course, to be considered, as given hypodermically or by the stomach.

It is evident that this is a subject upon which we need more positive information, and is therefore a field that would reward patient exploration. In the mean time, as a practical rule, in morphine-poisoning, it is better to administer the atropia hypodermically, in moderate doses, and to repeat it until the pupils are sensibly dilated, and to keep them dilated until the opium-symptoms disappear. There can be no advantage in carrying the atropia beyond this point. As an approximate guide, we have Dr. Mitchell's employment of a total of one grain of atropia to antagonize four grains of morphine, my own experience of a total of little less than a half grain of atropia against six grains of morphine, and Dr. Smith's estimate of one-thirty-second to one-twenty-fourth of a grain of atropia to every grain of morphia. By patient examination of medical journals doubtless many similar experiences could be found recorded, and something like a rule of practice established. In the case reported in the March number of this journal, it would seem that the full advantage of the atropia was not attained, only one-twentieth of a grain of atropia being used against seven grains of morphine, the attendant apparently preferring to rely upon the use of the battery, which was certainly very skillfully applied; but the protracted duration of the case is noteworthy.

The extreme prostration of the nervous system accompanying the convalescence in my own case has already been mentioned. This was especially remarked in the lower extremities, which from first to last seemed to suffer most from debility. It is an interesting inquiry, to what was this prostration, especially the weakness of the lower extremities, due—to the morphine, to the flagellations and other means practised to excite sensibility, including the action of a powerful battery, or to the atropia? As regards morphine, there is no evidence, so far as I know, that large doses of it are followed by extreme and protracted prostration. The muscular fatigue resulting from the causes just enumerated ought to have soon passed away. In relation to belladonna, I can find but little bearing on the question. Stillé (vol. ii., p. 35) says, among other symptoms following the application of one-sixth of a grain of atropia to a freshly-blistered surface: "The power of locomotion is sometimes lost, and the limbs feel as if asleep. General sensibility is impaired or destroyed. . . . Meanwhile *consciousness may be perfect, although the inability to move is complete.*" On the whole, I am inclined to charge the debil ity, especially that of the muscles of locomotion, to the influences of the atropia; and, if I am correct in this, it furnishes an additional incentive to discover the least dose that will neutralize the cerebral symptoms of a given quantity of morphine.

An interesting circumstance, daily noted by me throughout convalescence, was greater comparative feebleness in the early part of the day, notwithstanding the regular and free use of nourishment and stimulants throughout the night. This daily cycle, so far as I could discover, was entirely independent of all external influences. The same thing has often been observed in women suffering from nervous prostration, more particularly in diseases peculiar to their sex, but I have always regarded it as due to the failure of a supply of nourishment during the night.

The importance of the faradaic current in keeping up the respiration in cases of opium-poisoning cannot be over-estimated. Both in Dr. Schweig's case, as reported in the March number, and in my own case under the direction of Dr. Smith, the application of the electrodes over the phrenic nerves, just above the clavicle, gave, of all modes tried, the best results. In Dr. Schweig's case the patient was evidently saved by the electric current alone. It would seem not too much to affirm that, by the hypodermic injection of atropia and the judicious use of a *sufficiently powerful* faradaic battery, very few cases of opium-poisoning need prove fatal. It should be further stated that the young lady who swallowed three grains of the poison, by ten o'clock was quite seriously affected, but was kept walking in the open air for from three to four hours before she could be allowed to rest. In my daughter's case active exertion and mental anxiety prevented the development of narcotism.

II.—*Two Cases of Spontaneous Rupture of the Uterus, at Bellevue Hospital.* Visiting Physician, Dr. W. T. Lusk.

Case I.—Dr. J. D. Griffith, house-physician. (*See* frontispiece.)

Hannah H., aged thirty-two, married, had had nine previous pregnancies—six children at full term, and three miscarriages. During the course of this, her tenth pregnancy, nothing unusual transpired. Labor-pains began at noon, September 20th. At 5 P. M. she entered the confinement-ward. Patient was a fleshy, but rather a delicate-looking woman. At 7.30 P. M. Drs. Griffith and Fleming, of the house-staff, recognized a breech-presentation. At 11.30 P. M. the membranes, which had begun to protrude through the vulva, broke. After the escape of the waters the pains became less frequent, and the child advanced very slowly. At about three o'clock in the morning (September 21st), sudden collapse occurred. The patient uttered no cry, the attention of the physicians having been attracted solely by the peculiarly pallid and distressed appearance of her countenance. Going at once to the bedside, they found the pulse scarcely perceptible, the breathing hurried, the extremities cold. In a faint, husky voice, she complained of pain in the right hypochondriac region, and of intense thirst. Dr. Lusk was at once summoned, and at 3.30 A. M. extracted a dead child, weighing 10 lbs. 8 oz. Placenta was removed in forty-five minutes. Woman was conscious and sensible, but never rallied. Death took place at seven o'clock.

At the autopsy, the peritoneal cavity was found to contain a considerable quantity of fluid and clotted blood. A laceration, involving both the peritonæum and muscular structures, was found crossing the cervix at a point midway between the os externum and the os internum, and stretching up on the right side so as to involve a portion of the muscular tissue of the body. From this rent a large thrombus extended, which dissected up the peritonæum as high as the umbilicus. No thinning or abnormal condition of the uterine tissues was noticeable.

Case II.—Dr. M. J. Fleming, house-physician.

Mary C., aged thirty-eight, married. Patient has had three living children, and two miscarriages. Her labor began October 27th, in a female lying-in asylum. The waters broke (time not stated), and soon after labor-pains ceased. On November 1st patient was sent to Bellevue Hospital. On admission she was found to be weak and anæmic, with some œdema of legs and abdomen. She had pain in side and back. Urine was normal.

When examined by the house-physician, the cervix was found to be very soft and dilatable, no presenting part felt, and the hand on being withdrawn was found to be covered with dark, grumous, bloody fluid, possessing a most offensive odor. The under-clothing of patient was saturated with same discharge. The abdominal walls were thick from adipose tissue, and the belly pendulous. The pulse was rapid and very weak, extremities cold, voice faint and husky, respiration 40, temperature 98½°.

Patient was put in bed, hot bottles were placed about her body and extremities, and stimulants freely administered.

At 11.30 P. M. Dr. Lusk was summoned. On first introducing the hand it passed into a great, and apparently empty, cavity. Then withdrawing the hand, and carefully tracing upward the anterior cervical wall, the uterine cavity was reached, and a foot was seized, by means of which a male child, in an advanced stage of decomposition, was delivered. The patient died twenty-four hours afterward with symptoms of shock.

The autopsy revealed a peritoneal cavity filled with clotted blood. A large laceration, communicating with the peritoneal cavity, extended across the posterior surface of the uterus, just above the cervix. A smaller laceration was found on the anterior surface, not extending through the peritonæum, but lifting it up so as to form an enormous thrombus.

III.—*Case of Posterior, Angular Curvature of the Spine, with Paralysis of the Lower Extremities, complicated with Permanent Muscular Contractions. Presented before the Brooklyn Pathological Society.* By G. WACKERHAGEN, M. D., Surgeon to the Southern Dispensary of Brooklyn.

THE patient, aged fifteen years, born in Liverpool, England, has been the subject of considerable deformity. He came under my care in August, 1869. He is of healthy parentage, and was remarkably robust and exempt from sickness previous to an injury to the spinal column, caused by a fall down-stairs, when three years of age. No material harm was suspected until he complained of pain and tenderness in the upper dorsal regions; these were only felt when roughly handled or at play.

He was without medical advice for a period of eight months, when the mother noticed a prominence in the upper portion of the spine, and consulted a physician, who informed her that it was nothing of importance, and the boy would grow out of it in time.

Three months later the spinal deformity was considerably increased; about this time he had an attack of convulsions, and remained unconscious four hours, followed by paralysis, first of the left lower extremity, afterward the right.

At various times for three years he was treated at the surgical cliniques of the medical colleges, but without any perceptible improvement, when the parents, despairing of any amelioration of his condition, concluded to discontinue treatment, and render him as comfortable as their humble circumstances would permit.

One year longer he was without treatment; during this time he regained the use of his lower extremities, and attended school a few weeks, but was again suddenly deprived of the use of them, followed by muscular contractions. In this condition he had been for three years, when he came under my charge.

This photograph (Fig. 1) is a representation of the malposition of the lower extremities existing at that time. Locomotion was performed by raising the body with the arms, and springing forward. The prognosis in this case was very

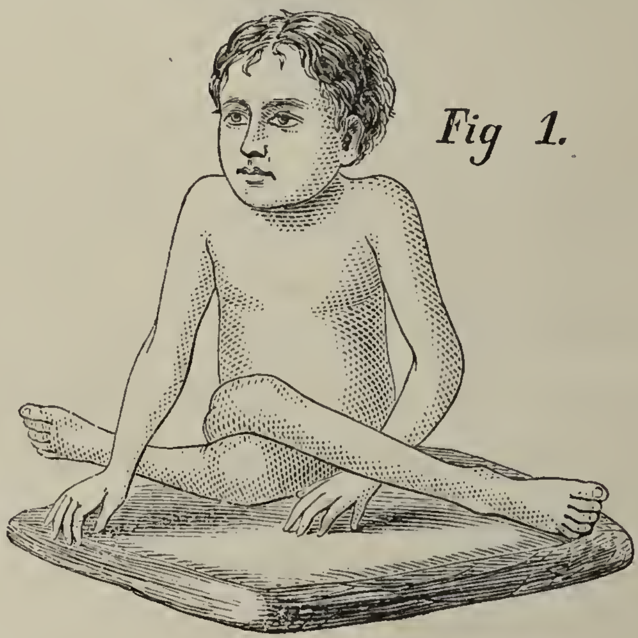


Fig 1.

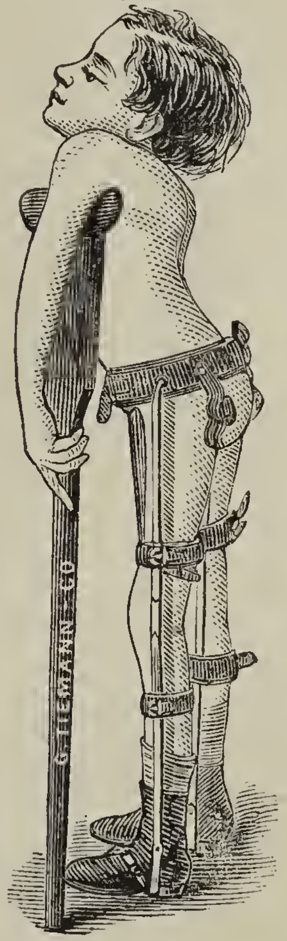
unfavorable; the patient was emaciated, and suffering from hectic; the fecal and urinary discharges were passed involuntarily.

The right thigh, middle third, measured seven and one-half inches in circumference, the left seven and one-quarter inches: the right leg in its greatest circumference measured five and one-half inches, and the left five inches.

The temperature below the knees, compared with other portions of the body, was greatly diminished, with complete anæsthesia. The skin was mottled in appearance; there was also tenderness of the spine on percussion.

Fig. 2 gives a view of the spinal deformity, and the consequent protrusion of the sternum, which have neither increased nor diminished since I first saw him.

Fig 2.



The patient having been placed under the influence of chloroform, the tensor vaginæ femoris and adductors of both extremities were found to be permanently contracted, producing abnormal flexion and crossing of the thighs. There existed, also, equino-varus, of the first degree, caused by permanent shortening of the triceps suræ and tibialis posticus of each leg. The deformity of the left foot was more aggravated than in its fellow.

After dividing the tendons of the contracted muscles, I applied Dr. Bauer's wire apparatus, for the purpose of keeping the limbs in position.

On the 7th of October, 1869, I made the first application of electricity, employing the induction apparatus of Dr. Jerome Kidder.

Electro-muscular contractility and sensibility, though diminished, were perceptible in the muscles of the gluteal and femoral regions, but more marked in the right; there was no response to electricity when applied to the limbs below the knees.

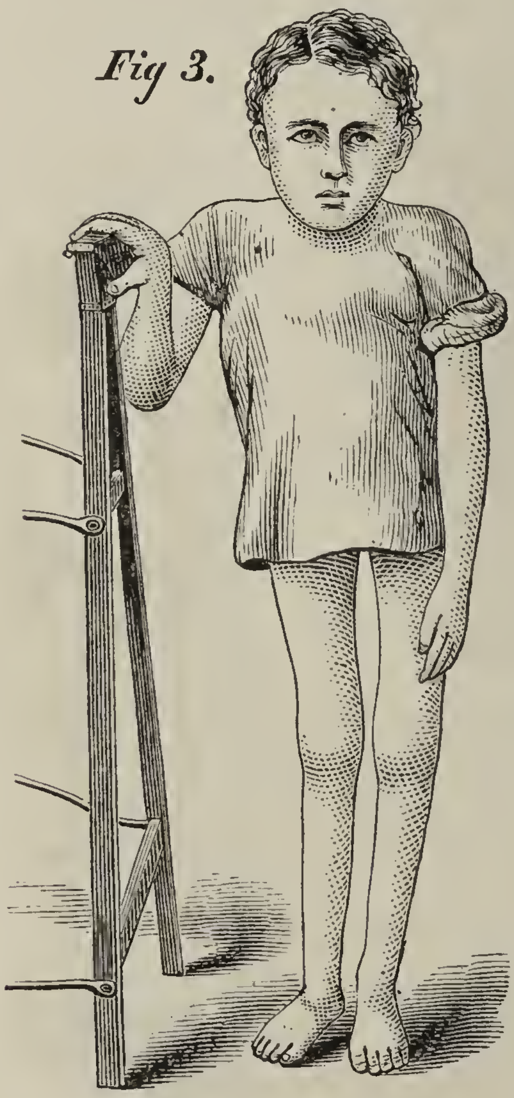
The muscles were faradized each day, followed by friction with phosphorated oil.

In five weeks, electro-muscular contractility and sensibility were perceptible in the tibio-fibular regions, with increase of temperature. The peronæi would respond only by the indirect method.

Under the administration of quinine, the hectic condition considerably abated, the appetite improved, and the pulse became more full and less frequent.

The patient remained in a recumbent position about seven minutes; by this time the tenderness of the spine had entirely disappeared.

Fig 3.



July 2, 1870, Dr. Bauer's hip-joint instruments were applied, and locomotion performed by the aid of crutches. An assistant was required, to prevent his falling, as he was unable to move the limbs consecutively; subsequently a crutch apparatus was constructed, with rollers attached, and, as the hip-joint instruments were quite heavy, the upper portion of the inside bars was removed; with these improvements locomotion was much facilitated.

In January, 1872, the patient was in excellent health, with considerable increase of strength; the appetite was good, the fecal and urinary discharges were more under control of the will, and the muscles more susceptible to the electric current.

The peronæi did not always respond to the direct, but invariably to the indirect method; he could flex and extend the limbs readily at times, but occasionally found them uncontrollable; could stand without the instruments for a few seconds.

The patient gradually improved, and is now able to walk supported by the crutch apparatus; the limbs have increased in circumference at the thighs one and three-quarters inch, at the legs one and one-half inch, and he can now stand without the instruments quite a long time. The fecal and urinary discharges can now be controlled.

I should have applied a spinal support, but the parents were financially unable to procure an apparatus suitable.

Notwithstanding the marked improvement, the parents have failed to send him to the dispensary since July, 1872, so that treatment has been discontinued for about one year and a half.

IV.—*Case of Normal Ovariotomy; Recovery. Woman's Hospital in the State of New York.* Service of T. Gaillard Thomas, M. D. Reported by Coert Dubois, M. D., House-Surgeon.

Miss A. B., aged twenty-two years, entered the hospital June 14, 1873, with the following history: Menstruated at twelve years; always regular, varying from two to four weeks. Time of flow four to eight days, and amount excessive. Dysmenorrhœa, pain beginning a week before, subsiding somewhat during flow, and most intense for four of five days after. No leucorrhœa. For seven years has suffered constant pain in left ovary, increased during menstruation and after any exertion; more or less pain in right ovary also at menstrual times. For five years has been confined to bed most of her time, not being able to walk or even stand without extreme pain. Position of uterus normal; urine normal. General health good; appetite fair; bowels constipated. Has taken morphine daily for a long time, and now takes from one-quarter to one-half grain in twenty-four hours. Somewhat nervous, but no marked hysteria. Had had many physicians, and exhausted all treatment. Counter-irritants of all kinds have been tried, both in hospital and before admission.

Diagnosis.—Chronic ovaritis. Both ovaries sensitive, and the left apparently enlarged.

Left the hospital June 28, 1873, to return in the fall for further treatment. Readmitted September 15, 1873; no treatment except for general health.

October 26th.—Dr. Thomas called a consultation, and it was decided to perform operation for removal of one or both ovaries (normal ovariotomy), in a few weeks, if patient was no better. Iodoform suppositories and pills of oxide of zinc ordered.

November 20th.—Operation. Nitrous-oxide gas was given by Dr. H. D. Nicoll, but, patient not taking it well, ether was substituted; it took half an hour to anæsthetize the patient.

Operation was commenced at 3.30 P. M., Dr. Thomas being assisted by Drs. Ward, Hunter, and the house-staff. Incision was made from pubes, extending upward about three inches; integument, adipose tissue, etc., being cut down to peritonæum —after hæmorrhage ceased, peritonæum cut upon a director, omentum pushed aside, fingers passed to fundus of uterus, then to ovaries, which were drawn out and ligated by double silk ligatures, passed through and tied on either side. On left side Fallopian tube was included in the ligature. Both ovaries were cystic, and left seemed somewhat enlarged. Pelvis was sponged out, and wound closed with four deep and six superficial silver-wire sutures. Time of operation twenty-five minutes. Ovaries examined by Dr. Noeggerath, who found them to be of normal size. Under the microscope both were found to be in a state of fatty degeneration and interstitial inflammation. A number of pacinian corpuscles, with numerous filaments leading to them, were seen. Dr. Noeggerath thinks the pain was due to the inflammation of the peritoneal covering, and the contraction resulting.

TREATMENT AND CONDITION AFTER OPERATION.

21*st.*—Patient reacted well from ether; has had a good deal of pain, which was controlled by morphine subcutaneously. Tried milk, but could not retain it. Has vomited, excessively so, in afternoon. Morphine stopped, and potassium bromide, about grs. xv every three hours, given by rectum.

22*d.*—Vomiting somewhat decreased, but, as potassium bromide not sufficient to subdue pain, again gave morphine. Patient nourished with beef-extract by rectum. Acid. hydrocyanic. dil. gt. j given occasionally to allay vomiting.

23*d.*—Instead of morphine subcutaneously, aq. ext. opii, gr. j to grs. ij, given every three hours, with beef-extract by rectum.

24*th.*—Since using aq. ext. opii, has had less pain and less vomiting; patient very weak, but is retaining some nourishment by stomach.

25th to 28th.—Slowly improving.

28th.—Stitches removed and union good, except in lower part of wound, where she had a small abscess. Has had no marked symptoms of peritonitis since operation. From November 28th to December 13th has been troubled with intestinal pains, resembling colic, varying in intensity and location; still some vomiting. Pain subdued by aq. ext. opii and morphine, both hypodermically and by stomach.

December 23d.—Has been gradually improving and is sitting up in bed.

February 10th.—Stopped morphine entirely, by her own request; appetite excellent, and is walking about the house every day.

Patient had a flow at the menstrual time in December and January, lasting the same number of days as her normal menstruation, and with the same amount of pain. At other times has been comparatively free from the pain, which formerly she had all the time.

24th.—Left hospital to go home; for past few days has been walking out-of-doors and riding daily. Health improving very fast.

In February and March had no flow, but more or less pain at the menstrual time. In April and May again had flow similar in character to menstrual blood.

June 11th.—Patient was in the city, and called at the hospital. Is looking well, and has gained in flesh and strength; walks and rides without much fatigue. Says that, although suffering some pain at times, she is well satisfied with the operation, and feels hopeful as to continued improvement.

RECORD OF PULSE AND TEMPERATURE.

November 20th.—9.30 P. M., pulse 96, temperature 99°; 11.30 P. M., pulse 120, temperature 100½°.

21st.—8 A. M., pulse 108, temperature 99½°; 10 A. M., pulse 105, temperature 98½°; 2 P. M., pulse 108, temperature 99°; 9 P. M., pulse 124, temperature 100⅕°; 11 P. M., pulse 130, temperature 100⅗°.

22*d.*—5.30 A. M., pulse 140, temperature 101°; 10.30 P. M., pulse 130, temperature 100°; 12 M., pulse 120, temperature 99°; 8 P. M., pulse 126, temperature 100°; 11.30 P. M., pulse 130, temperature $100\frac{1}{5}$°.

23*d.*—5 A. M., pulse 130, temperature 100°; 10 A. M., pulse 130, temperature 100°; 2 P. M., pulse 130, temperature $100\frac{3}{5}$°; 5 P. M., pulse 120, temperature 100°; 9.30 P. M., pulse 126, temperature 100°.

24*th.*—A. M., pulse 120, temperature $99\frac{3}{5}$°.

After November 24th, pulse sometimes rapid, but temperature never over 99, and usually normal.

Notes of Hospital Practice.

RECEPTION HOSPITAL, NEW YORK.

Tetanus from lacerated Wound of the Foot; Amputation and Cure.—A boy entered the Ninety-ninth Street Reception Hospital suffering from a lacerated wound of the foot, caused by injury received at the Harlem draw-bridge. The foot after a few days became inflamed and œdematous, and from the time of injury caused excessive pain.

On the twelfth day patient developed marked trismus, and on the next day gave evidence of opisthotonos, with severe pain in the back of neck.

The general muscular rigidity was so decided the following day, that, in changing him to another bed, he was found to be as stiff as a board.

Hypodermic injections of morphia and atropia were administered, but with little benefit. Occasionally he would have a convulsion, and then chloroform inhalations relieved for the time. Five days after the development of tetanus, it was decided to amputate, though without any decided confidence of cure. Previous to this the wound had been treated with water-dressings.

Dr. M. B. Early removed the leg between the lower and middle thirds, using circular flaps. The day after the operation all trace of tetanus had disappeared, and in three weeks the patient was discharged. Following the operation there was a certain amount of necrosis at the end of the bone, and on this account he was kept under observation for several months, but no unfavorable symptoms developed.

BELLEVUE HOSPITAL, NEW YORK.

SURGICAL DIVISION.

Gunshot-Wounds of the Chest on the Left Side; Recovery.—Two cases of this injury have been under treatment recently in the hospital. In one of them the ball entered between the third and fourth rib, inside the nipple, and emerged at the lower angle of scapula. The patient was taken to the hospital an hour or two after the injury, and was then suffering pretty severely from shock. An examination of the chest showed flatness over the lower portion from internal hæmorrhage, as was suspected. In four hours after, the flatness extended over the whole of the chest; whether this was due to increase of the hæmorrhage or to pleurisy, it was impossible to determine; the condition of the patient showed no signs of increase of loss of blood. The symptoms the patient complained of were severe pain, with dyspnœa. He steadily improved, and in about six weeks was able to walk about. The surgical treatment consisted in covering the wound with lint, and keeping the patient quiet.

The second case was not so severe. The ball entered between the fourth and fifth ribs, at the outside of the nipple, but did not emerge. When the patient came into hospital there was not much shock, but considerable flatness over the lower part of the chest. From the beginning, patient did well, and in about three weeks was able to be about. His greatest pain was felt at a point posteriorly, and it is supposed that the ball may have impinged on a nerve and caused some injury to a branch. Eventually the pain was relieved.

Gunshot-Wound penetrating the Left Ventricle of the Heart; Temporary Recovery.—A boy, aged fourteen, received a pistol-shot wound near the nipple, and shortly after entered the hospital.

After admission, pericarditis, pleurisy and pneumonia, developed, and in five or six days he died.

Autopsy.—The pericardium was found to contain but very little blood. An examination of the heart showed it to have a penetrating wound of the left ventricle. Extensive inflammation of the lungs, pleura, and pericardium, was also noticed, and after a search the ball was found lodged in the lung, above and behind the point of injury to the heart.

Considerable interest attaches to the wound of the heart. The course of the ball through the ventricle was oblique, making, in reality, a valvular opening, and in this manner preventing hæmorrhage into the pericardium. Had it not been for the inflammation of circumjacent viscera, in all probability the patient might have recovered.

MEDICAL DIVISION.

Pachy-meningitis, with Gummy Tumor of Dura Mater.—Dr. A. L. Loomis recently presented a case of this nature at the Pathological Society, and since that time another, nearly identical with the former, has come under his observation. The patient entered comatose, having had convulsions in the station-house, at very short intervals. These convulsions continued for several hours after his admission. The right pupil was dilated and the left contracted. The left conjunctiva was suffused. On admission, ten minims of Magendie's solution were administered hypodermically, and in about two hours convulsions ceased. Three-quarters of an hour afterward consciousness returned, and the patient was able to speak. It was then found that there was a loss of motion and sensation on the left side of the body. The history now obtained from the patient was to the effect that ten years ago he had a chancre, followed by a secondary eruption in six months. Three months ago complained of headache, with twitchings of the muscles on the left side, but never lost his consciousness before the present attack.

An examination of the heart revealed a systolic murmur. Three hours after return to consciousness, had twitching of the muscles of right shoulder, but did not have a general convulsion. However, after some hours, convulsions did return, and in forty-eight hours patient died comatose. The diagnosis of gummy tumor on right side was made out before death.

Autopsy.—Nothing abnormal could be detected on the head before the scalp was removed, but on removal of the scalp a slight prominence of the skull was discovered on the right side. When the calvarium was taken off, the dura mater at this point was elevated and attached to the pia mater; beneath was a gummy tumor which projected above the membranes, and hollowed out the plates of the skull to a slight extent. The heart was found to be normal, but on the inside of the arch of the aorta were found ulcerations and atheromatous plates.

CHARITY HOSPITAL, NEW YORK.

SURGICAL DIVISION.

Excision of Humerus.—A little boy, three years of age, entered hospital suffering from chronic ostitis of the humerus. The disease had been in progress for about six months, but had not particularly debilitated the patient. The upper part of the humerus was considerably enlarged, and communicating with it were two sinuses, one in front and the other at the inner side of the joint. The articulation itself was involved.

Dr. Joseph W. Howe proposed to remove the whole of the diseased bone. He first made an incision along the course of the sinuses and continued it up as far as the joint, and down for two or three inches. The caries was found to extend as far as an inch above the elbow-joint. In the removal of the humerus the periosteum posteriorly was preserved.

After the operation the patient did well, and in six weeks the formation of new bone had taken place to such an extent that there was little appreciable shortening in the arm.

There is also perfect motion at the shoulder and elbow joints.

MEDICAL DIVISION.

Subacute Pleurisy. Thoracentesis, followed by Death.—The patient had an attack of subacute pleurisy of six weeks' standing, for which the ordinary treatment proved of but little service. It was decided to use the aspirator, and by this instrument sixty-four ounces of fluid were removed.

The operation took place at 4 P. M.; at 7 P. M. he was sitting in his chair and feeling comfortable. About midnight he got up, and, on walking over to the water-closet, dropped dead.

Diabetes, followed by Albuminuria and Death.—Dr. A. M. Pierce had under his charge in this hospital a rather rare case of diabetes, with a sequel of albuminuria. Two months before entering, noticed great thirst with large increase in the amount of his urine. When examined on admission, the urine was found to contain sugar and have a specific gravity of 1030. The amount passed daily was over one hundred ounces. After a sojourn in hospital of six weeks, left, and in two weeks reëntered, complaining of difficulty in passing water.

He now passed about thirty ounces a day. There could not be detected any trace of sugar in it, by Trommer's test, but, on examining it by heat and nitric acid, albumen in large quantity was found. There was no œdema of the extremities. In four days the patient died of uræmic coma.

OBSTETRICAL DIVISION.

Recently a large amount of puerperal fever developed in Bellevue Hospital, and it was decided to convey all the pregnant women to Blackwell's Island. They were placed in one of the frame pavilions by the river-side, under the charge of the chief of staff, Dr. A. E. McDonald, and it is a point of great interest to know that, after being quartered in the pavilion, not a single death occurred, though puerperal fever continued in Bellevue up to time of removal to the island.

Correspondence.

CHANGES IN THE HARVARD MEDICAL COLLEGE.—HOW THE VARIOUS BRANCHES ARE TAUGHT.

Boston, *July* 15, 1874.

Knowing how much interest is felt by the readers of the Journal in any matter pertaining to medical progress, it will be my object in this letter to give a brief sketch of the changes which have taken place in the Harvard Medical School, and the results up to the present time.

At the risk of repeating that which is familiar to every one, I will first recapitulate the changes announced in the prospectus: "Instruction will be given by lectures, recitations, clinical teaching, and practical exercises, uniformly distributed throughout the academical year. The year will be divided into two equal terms, either one of which will be more than equal to the former 'winter session,' as regards the character and amount of the instruction. The course of instruction will extend over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another.

"Instead of the customary oral examination, for the degree of Doctor of Medicine, held at the end of the three years' period of study, a series of written examinations on all the main subjects of medical instruction will be distributed for regular students throughout the whole three years. Every candidate for the degree must pass a satisfactory examination in every branch, at some time during his period of study."

Such were the principal changes announced.

In order to fulfill the promise as to improving the character and amount of instruction, it was first necessary to develop two or three branches which had been in a rather backward condition, by appointing new instructors, building laboratories, and making other improvements.

The position of the Harvard Medical School was a peculiar one, for, while it was conducted on higher and more scientific principles than the other great schools, it was behind them in the amount of practical teaching.

In 1871 a physiological laboratory, the need of which had long been felt, was added to the school, the chemical laboratory and the microscopical room were improved, and other similar changes made, which indicated that the Faculty were prepared to carry out in earnest the promises held forth in the prospectus.

The number of students who entered the school under the new system was a small one, amounting to about thirty, I think.

The total number in the school was a fair one, as most of the second and third year men had come back to finish their courses under one system or the other. At the first examination there were no men who graduated under the new system, though several men passed their first examinations.

The new method worked so well that the second year the regular class that entered was considerably augmented in numbers, and many of the old students decided to continue their studies under the new method. The last class was of goodly size, made greater by the number who had been dropped from higher classes on failing to pass their examinations. The three classes numbered as follows: third class, to graduate this year, 29; second class, 23; first class, 69.

In addition to these students there were 40 unclassified, 10 studying single branches, not regular members of the school, and four pursuing graduates' courses. This made a total of 121 regular students and 54 others, or 175 in all. In the term of 1869–'70 the number of students amounted to 306, or 136 more than the school contained this year. Next year will be a fairer test of the new system, as the last examination under the old system took place early this year, and now men are examined only under the new method. There were sixteen candidates at the examination, and only eight were graduated. The remainder will probably join other schools. It would seem fair to infer, from the above figures, that the school in 1876 will be quite as large as in 1870.

It is difficult to state all the ways in which the school has improved; perhaps this will be most easily done by comparing the instruction in the various branches of three years ago with that of to-day.

Anatomy was always well taught by Dr. O. W. Holmes and Dr. Porter, and this branch has changed but little, the recitations only occupying a more prominent position than before, and being much fuller. This is completed as far as examinations are concerned, the first year, but the student continues to dissect the first term of the second year. The first-year student dissects but little, during his first three months. The dissecting-room contains but nine tables, is on the ground-floor and not well ventilated, and, as the supply of subjects is apt to be scanty, the dissecting advantages are not all that could be desired.

Physiology was imperfectly taught before the new system was inaugurated. Dr. Holmes was Professor of both Anatomy and Physiology, but gave his attention principally to the former. One winter Dr. Lombard gave two lectures, but broke down, and an occasional lecture by Dr. Holmes was all the instruction in this branch the rest of the term. The next winter Dr. W. T. Lusk gave an admirable course of lectures, and was popular among the students. Dr. Bowditch was appointed Assistant Professor of Physiology under the new system, and, with thorough lectures, recitations, experiments, and a laboratory for students to work in, has done much to develop this previously-neglected branch.

Chemistry, in old times, under Dr. J. C. White, was very good, and now, with Dr. Wood, still continues so. Much attention is paid to medical chemistry, separate courses being given on urine and poisons. Properly speaking, medical chemistry is a study of the second year, but, if the student has studied general chemistry in Harvard College, this is considered sufficient preparation, and medical may be substituted for general chemistry.

These three branches constitute the first year's course of study, and the student has as much work as he can attend to in properly fitting himself for the examinations. The students even say that they are "driven."

No hospital-work is done this year, except now and then witnessing an operation. The study of anatomy, it should be stated, includes a thorough course in histology.

The theory and practice of medicine was taught in olden times by Dr. Shattuck, in the form of lectures; these were thinly attended. In the summer term recitations were held by Dr. Minot. "Clinical conferences," as they are called, were held by Dr. Ellis, both in the lecture-room and at the bedside. These consisted of examinations of cases and reports on them, each report being criticised by both students and professors. Such exercises were useful, not only serving to display the abilities of the teachers, but also the disabilities of the students.

The lecture element of this branch has gradually somewhat faded out, and the element of recitations and "clinical conferences" been gently disseminated throughout the year, much to the benefit of the student.

Dr. Bigelow is still Professor of Surgery. His lectures are very fine, and, with a large number of operations at the Massachusetts General and City Hospital, and young and able men to teach minor surgery, bandaging, and give operating courses, the surgical advantages are, and always have been, of very great merit.

Obstetrics continue much the same as before "the war," so to speak, only differing in there being more recitations and fewer lectures. Dr. Buckingham delivers the lectures and Dr. Reynolds, one of the ablest teachers in the school, conducts the recitations. This branch is not pursued until the third year; as cases are hard to get, it might be supposed that the student would still have something to learn in obstetrics on leaving the school.

In materia medica Dr. Edward H. Clark gives one lecture a week to third-year students. Other instruction is given in the form of recitations by Dr. Edes.

Formerly Dr. J. B. S. Jackson delivered lectures twice or thrice a week during the winter term on pathological anatomy. These lectures were of the school before the microscope. In the summer school, microscopic pathological anatomy was recited on to Dr. Ellis, out of Virchow's "Cellular Pathology." There is, at present, another instructor in this branch, and much interest has been infused into the students. The recitations are judiciously scattered through the year, and well illustrated by specimens.

Such is a brief comparison of the main branches of study in the school, before and after the introduction of the new method.

Though the department of skin-diseases is still considered a special one, yet it is yearly increasing in importance. Dr. J. C. White has done much to advance this branch in the Harvard Medical School. His lectures are types of clear, systematic, scientific work, and, being thoroughly illustrated, both by plates, cases, and microscopical preparations, and giving the most recent advances in the science of skin-diseases, are well worth the attendance of specialists from all parts of the country.

The list of studies pursued the first year has already been given. Second and third years are as follows: Second year: Medical Chemistry, Materia Medica, Pathological Anatomy, Theory and Practice of Medicine, Clinical Medicine, Surgery and Clinical Surgery. Third year: Pathological Anatomy, Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

It is expected that students shall pass these examinations in regular order. Until all examinations have been passed, the student is unable to graduate.

The number of supplementary branches established since 1870, in addition to those named above, is surprising. There are now professors of Mental Diseases, Ophthalmology, and Hygiene; an instructor in Percussion, Auscultation, and Laryngoscopy, and instructors in Surgery. There are also a clinical lecturer on the Diseases of Women and Children, an additional lecturer on Syphilis, and lecturers on the Diseases of Women, on the Diseases of Children, and on the Application of Electricity in Nervous Diseases. These various topics were of course touched on in old times, but they are now taught by regularly-appointed lecturers and instructors.

A later introduction of "Courses for Graduates" has been made into the school. These are of a practical nature, closely resembling similar courses in Vienna; and as they are given by young men, all of whom have studied abroad, and have the newest forms of apparatus, they will no doubt prove serviceable to the rusty practitioner, who is anxious to learn the use of the ophthalmoscope, laryngoscope, or electric battery.

One is struck by the interest taken by students in their work; this perhaps grows partly out of a desire to do well at examinations. Be this as it may, the average student does much better than formerly, and works with a thoroughness quite unknown a few years ago.

The question arises in the mind of the outsider, "Does the student get enough practical work?"

First, there is the subject of obstetrics, pursued but one year. There are no clinics held in the school, as is the custom in New York. The students rarely visit more than two hospitals, one of which is close by the school and contains about two hundred beds, and the other is two miles off and contains about two hundred and fifty beds; the hospitals being small, the proportion of interesting cases is not large.

To see syphilis the student must travel to Chelsea; there has heretofore been but scanty opportunity to see cases of uterine disease, and the difficulty of seeing minor surgical operations has been great. There may be as many as two autopsies weekly accessible to the student. The small dissecting-room I have already referred to. These obstacles are insurmountable, probably, in a small American town, but it would seem from the large amount of theoretical work laid down, combined with the difficulty of getting hold of what clinical material there is, that the student could not be sufficiently equipped for practical work at the end of three years. The expenses attending the course are somewhat greater than those of other schools, as the student must spend the whole year, with the exception of the vacations, in town, and each of the three years' instruction amounts to two hundred dollars.

To make the system perfect, the course must be prolonged to four years, and the advantages of clinical study made more open to the student.

That those who instituted the change did nobly, and that they are bound to succeed, is sufficiently self-evident.

Forceps.

Proceedings of Societies.

THE NEW YORK PATHOLOGICAL SOCIETY.

Meeting held June 11, 1874.

The President, Prof. H. Knapp, M. D., in the chair.

Prof. H. B. Sands exhibited four small fecal concretions, which were interesting from the fact that they were discharged from an abscess resulting from peritonitis, consequent on ulceration of the vermiform appendix.

They were from a gentleman aged forty-one years. Having left his residence in the morning of April 23d, in his usual health, in the afternoon he suffered great pain, diffused over the abdomen; nausea and vomiting. He felt cold, but had not a distinct chill. The vomiting and nausea subsided after a few hours, but the pain in the abdomen continued, being most severe in the right iliac region. He was seen with Dr. Ball on the following evening, at which time he presented symptoms of localized peritonitis, also in the right iliac region. No decided change had taken place by April 26th, three days after attack. The abdomen was slightly swollen throughout, but not very tense. The tumor could be felt in the neighborhood of the cæcum, about as large as the fist, and quite firm to the touch. The question arose as to the true nature of the disease. It might be either—1. Intussusception; 2. Internal hernia; 3. Impaction of fæces; and, 4. Abscess connected with disease or ulceration of the vermiform appendix. To this last diagnosis the surgeons in charge were inclined to hold. From Sunday, April 26th, a record was kept. For about one week after the attack the patient showed signs of peritonitis. The temperature was 101° to 102°, pulse from 90 to 101. Distention of the abdomen became somewhat considerable. It increased up to the fourth day, and then subsided. The bowels were not moved until the sixth day. He then took castor-oil and an enema. By this means he obtained two or three copious discharges, causing a feeling of exhaustion, but he soon rallied, and felt very much relieved.

mer position, give some pretty sharp answers to questions. His pulse was then 50 per minute, and temperature 97.5° to 98°. He passed his urine and fæces freely, and was able to swallow food and drink. He complained constantly, however, of pain in the head, upon the right side. The result of our examination of lung and abdomen was negative. A diagnosis of meningitis was made, that result being based upon the history of the case, and the irregular symptoms presented. It seemed to be due to syphilis. The symptoms pointed to cerebral disease. The treatment adopted was three drachms iodide potassium within the twenty-four hours, but, vomiting supervening, he did not get the whole amount. The vomiting was projectile in character. The bromide was then administered per rectum, without much effect. In twenty-four hours after admission, coma had very much increased. He was not paralyzed, however, more upon one side than upon the other; still, there was less power in the right arm up to the time of his death. On the second day after admission, coma became more profound, and he gradually sank, and died in that state. The temperature and pulse rose rapidly on the last day, temperature being 104°, pulse 150 per minute. Up to the second day the temperature and pulse did not rise.

Post-mortem. — Thorax and abdomen and all organs healthy, except a slight pulmonary tumor and interstitial nephritis; in the right cerebral hemisphere the dura mater was very much thickened for a space of two inches square. Underneath this thickened membrane was found a gummy tumor, firmly attached to both the pia and dura mater. The thickening of the dura mater extended in every direction from the point of greatest thickening; and the erosion of the bone corresponded to the portion of the dura mater where the thickening was greatest. There was very little fluid underneath the arachnoid, and no evidences of arachnoiditis, except at the point already noticed. No fluid in the ventricle or in the left corpus striatum, but there was found there a cyst, perhaps the remains of an old extravasation. There was no pus between the cranial bones and the tumor.

Dr. Post presented a small specimen of bone, taken from the foot of a young lady, the subject of deformity from wearing a tight shoe. The deformity was subluxation of the first and second phalanges of the index-toe, causing one toe to override the other.

Dr. Janeway exhibited a section of a cerebral artery of the left side, from a boy fifteen years of age, who had some time previously fallen twenty feet and struck on his head, causing collapse. The specimen was shown expressly to illustrate how a patient may have many diseases, and yet die from the immediate effects of none of them, but from other causes. In this case there was found, at the *post-mortem*, a morbid condition of many organs.

Dr. L. A. Sayre related two cases of hip-disease, with specimens, one of them showing the necessity of operating sometimes when symptoms appear to forbid it. The results in these cases exceeded the most sanguine expectations.

Dr. Robert Newman also presented a specimen of embolism of the pulmonary artery at its bifurcation, from a lady who had given birth to an infant, and had seemingly progressed well until the twentieth day after confinement, when, upon making slight exertion, she suddenly screamed, pointed with her hand to her breast, and expired. At the *post-mortem*, although the Fallopian tubes were joined to the intestines, and there was a large abscess in the right ovary, yet the plug in the pulmonary artery was so extensive that it was, no doubt, the cause of death.

Dr. Knapp presented three specimens of encephaloid cancer of the retina, occurring in young subjects; after which the Society went into executive session.

NEW YORK SOCIETY OF NEUROLOGY AND ELECTROLOGY.

Meredith Clymer, M. D., President, in the chair.

At the stated meeting held June 15th, the minutes of the last meeting were read and approved. Dr. J. J. Mason, Corresponding Secretary, reported the receipt of replies from many corresponding members; and also a copy of Hitzig's work, containing his most recent experiments in reference to the functions of the brain.

Dr. Janeway remarked that he had experimented on the pia mater of a dog, and injected hypodermically ten grains of quinine, without result on either arteries or veins; and subsequently fifteen grains, without result, except slight dizziness. He thought that quinine acted rather on the nervous than on the muscular system.

Dr. Seguin said there were many sources of error in such experiments; negative results were not conclusive unless sufficiently numerous to overthrow the positive results of previous experiments.

Dr. Beard had not observed any effect on the retina of the lower animals, rabbits, etc., ophthalmoscopically, after injection of from one to five grains of quinine.

Dr. Janeway had found a rise instead of fall of temperature in the healthy human subject, during cinchonism.

The President suggested the propriety of further experiments.

Dr. Van Bibber exhibited a case of atrophy of the posterior muscles of the neck after severe concussion. There was severe pain in the back of the neck, following a fall from a car, and a subsequent false step in a cellar.

Dr. Seguin, after examining the case, remarked that the trapezius and sterno-mastoid process remained unimpaired. The atrophy of muscles was supplied by the first and second cervical nerves, without any definite reaction. The case was one of injured nerve, with nervitis, analogous to neuralgia, the atrophy following the injury to the shoulder-joint.

Dr. Janeway said that he had a case of a woman shot in the mouth by her husband, the ball lodging in the pharynx. First, neuralgia appeared, then paraplegia, followed by suppuration and destruction of the intervertebral cartilages. It arose from the concussion of the discharge of the pistol, not from the ball.

Dr. Jacobi thought atrophy might result from disease of the muscles on account of pain (which the patient felt only in the upper insertion of occipital muscles) with accompanying inflammatory action.

Dr. Janeway had made autopsies of two cases of detachment of the odontoid process; sudden death occurring in the one case from sneezing, and in the other from nodding.

Dr. E. C. **Seguin** then read the paper of the evening, on "Hysterical Symptoms in Organic Diseases of the Nervous System." The first part of the paper was devoted to an enumeration of the symptoms which are observed in typical hysteria. The second part of the essay was occupied by the relation of five cases of organic disease of the spinal cord, in which distinct hysterical symptoms (convulsive attacks, undue emotion, etc.) had been prominent. The doctor considered that the occurrence of the hysterical symptoms in these cases was due to a mere coincidence; and he thought that the cases were valuable chiefly as guides for avoiding errors in diagnosis. The third portion of the paper contained fifteen cases of organic disease of the brain in which hysterical symptoms (emotional disturbances, left anæsthesia, globus hystericus) had been observed. He called attention to the remarkable fact that thirteen out of fifteen of these cases were the subject of disease of the right hemisphere, and pointed out the remarkable parallelism between this and the fact that the common hysterical symptoms are upon the left side of the body, i. e., also represent a disorder of the right hemisphere. The doctor expressed his belief that the symptoms in these cases, those with organic disease and those with simple disorder of brain-functions, were produced in the same manner, by the inhibition (arrest) of certain functions of parts of the encephalon by an irritation set up by a lesion of the brain-substance in one case, and by a lesion of some peripheral (distant) organ in the other. In other words, Dr. Seguin accepted Brown-Séquard's hypothesis of the mode of production of brain-symptoms. At the end of the paper the doctor referred to recent researches by Brown-Séquard, Charcot, and De Fleury, which show that lesions of either hemisphere produce a somewhat different grouping of symptoms.

RIGHT HEMISPHERIC LESION.	LEFT HEMISPHERIC LESION.
More anæsthesia.	Loss of speech (aphasia).
Greater palsy.	Palsy of muscles of articulation.
Palsy of sphincters.	Seldom hysterical symptoms.
Alteration of nutrition, { Œdema. Eschars. Fever. Pulmon'y Congest'n.	
Disorders of special sense.	
Hysterical symptoms (Seguin).	

Dr. JANEWAY and Dr. J. J. MASON supported Dr. Seguin's views as expressed in his paper. The latter remarked that he had had several cases of left hemiplegia in which hysteria had been present, but did not remember hysterical symptoms to have occurred in any case of right hemiplegia.

Dr. BEARD had seen syphilis produce hysterical symptoms. Hysteria might easily lead to pure organic trouble.

Dr. DALTON cited several instances of the power of imitation in peculiarity of speech, gestures, etc. Hysterical effects were amenable to the same power. Abortion in one cow was frequently imitated throughout an entire herd. Nervous diseases were commonly so acquired. He had two dogs, one of which was afflicted with gastric fistula, and became thoroughly epileptic and useless. The other, suffering from uræmic fistula, had epileptic fits at the same time as the first, but had exhibited no tendency to epilepsy either before or since.

Dr. CLYMER remarked that after hæmorrhage emotional trouble was almost certain.

Dr. DALTON asked whether the question of visible speech, or a universal alphabet for the use of the deaf and dumb, whereby they could be made to understand all languages, had ever been brought before the Society. He then briefly explained his system.

The Report of the Executive Council was then read and approved; and, after several gentlemen had been balloted for and elected as resident members, the meeting adjourned till the third Monday in September.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Meeting held June 22, 1874.

The President, ELLSWORTH ELIOT, M. D., in the chair.

THE following were announced as candidates for membership on recommendation of the Comitia Minora: Edward M. Cameron, a graduate in medicine of the College of Physicians and Surgeons, 1853; J. Blake, a graduate of the same college in 1874; Samuel B. Ward, of the University of Georgetown, D. C., 1864.

The death of William B. Lewis, M. D., a member of the Society, was announced.

Dr. Goodwillie presented the meteorological report for the month of June.

David Lewis, M. D., then read a paper on cancer and its treatment, with the object of calling attention to the use, in a certain class of cases, of arsenious acid, as recommended and practised by Dr. Alexander Marsden, of the London Cancer Hospital. Two drachms of arsenious acid being made into a paste with one drachm of mucilage of acacia, this paste is applied, with proper precautions, every second or third day. After considerable experience with this method of treatment, Dr. Lewis was of opinion that it possessed many advantages, and that its early use would often be the means of saving life.

After some discussion of the subject, the Society adjourned for the summer months.

THE NEW YORK MEDICO-LEGAL SOCIETY.

At a meeting held June 25th, Clark Bell, Esq., in the chair, W. Ellinger read a paper of much historical interest on the "Witches' Hammer," and Dr. Stephen Rogers presented his criticisms on the new medical law for the State of New York. We have not space for a synopsis of the former paper. The opinions of Dr. Rogers will be found in full in our last issue.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY.

Meeting held June 16, 1874.

The Vice-President, Robert Newman, M. D., in the chair.

Dr. Fowler, Sen., read a paper on the influence of remedies in phthisis.

He began by glancing in a general way at the anatomy of the disease, and the nature of tubercle as compared with phthisis, especially as set forth in a recent discussion in the London Pathological Society, and then related three typical cases, with the remedies employed in each case. Particular attention was directed to the use of turpentine as a vapor, to change of climate, and to good hygiene.

Bibliographical and Literary Notes.

ART. I.—*A Manual of Toxicology, including the Consideration of the Nature, Properties, Effects, and Means of Detection of Poisons, more especially in their Medico-Legal Relations.* By JOHN J. REESE, M. D., etc. 8vo, pp. 507. Philadelphia: J. B. Lippincott & Co., 1874.

FROM the study we have given the book of Dr. Reese, we are disposed to think very favorably of it. The author's experience in chemical research, together with his familiarity with the recognized authorities upon the subject of toxicology, eminently fits him for the task, which he seems to have performed both carefully and conscientiously.

The plan of the work is, perhaps, as good as can at present be chosen. The first 131 pages (comprising nine chapters) are devoted to the more general considerations of the subject. The author adopts a simple classification of the special poisons, namely: "I. Irritants." "II. Neurotics." These are subdivided into orders in accordance with the physiological action of the drug, rather than with its chemical composition.

In the chapter on "Evidences of Poisoning," Prof. Reese expresses the opinion that the *symptoms alone*, unaided by circumstantial evidence and a *post-mortem* examination, or in case of suspected death from the mineral poisons, without the detection of the substance in the urine or tissues, are insufficient to prove a case of poisoning.

"He [the medical man] should never forget that the symptoms before him may really be those of disease. We deem such a person guilty of a flagrant wrong when he gives publicity to the idea of poisoning guided merely by the symptoms alone. *Unless he has first properly analyzed the suspected food or drinks*, *the vomited matters*, *and*, *above all*, *the urine*, he has no right to ventilate the suspicion of poison, and thus to implicate a possibly innocent person. If death is not the consequence, and there has been no chemical examination, as above mentioned, there is no possibility of clearing up the case" (p. 49).

Great care is urged upon the physician in making the *post-mortem* examination, and in preparing specimens for analysis. In order to avoid the *imbibition* of poison into the liver and other tissues from the stomach, the last-named organ should be packed in a jar by itself. *Clean* jars only are to be used, all *antiseptics* avoided, and the jars secured by new corks covered by moistened bladder or parchment, *without* sealing-wax.

In the section of this chapter devoted to "Chemical Analysis" the author strongly insists on "*obtaining the metal*," in cases of suspected poisoning by the metals proper, as arsenic, antimony, copper, etc., etc., before it can be positively asserted that poisoning by the suspected substance has taken place. Many poisonous substances, however, cannot be detected by chemical processes, and in these cases the conclusion is to be based on a careful collection of the circumstances, symptoms, *post-mortem* appearances, etc.

In the chapter on the "Duties and Privileges of Medical Experts," the author very justly urges that the expert witness should secure the necessary signing of bonds for his fees *in advance*, or he will be very likely to be left in the lurch at the end of the trial.

In the description of individual poisons, each article is taken up under its respective head, with a clear account of the symptoms and morbid anatomy induced, and the properties and chemical analysis of the article under discussion. Rather more than usual prominence is given to the consideration of arsenic, phosphorus, antimony, opium, and strychnia, but no more, perhaps, than their importance demands.

The author tells us, in the preface, that the subject of "*spectrum analysis*" is omitted in the treatise. He says it is a very delicate process, but in the present state of science it would be unsafe "to rest the evidence solely upon the spectral demonstration of the supposed toxic agent, to the exclusion of the recognized *chemical* test. When an accumulated experience with spectral analysis has rendered the identification of the various poisons absolutely and *exclusively* certain, we can probably afford to abandon altogether the more tedious and complex methods of chemical research."

We consider the work a reliable and convenient hand-book for the specialist, and also a valuable one for the general practitioner and student of medicine.

Art. II.—*The Treatment of Syphilitic Diseases by the Mercurial Vapor-Bath.* By Langston Parker. Compiled by John W. Foye, M. D. Boston: A. Williams & Co., 1874.

It seems, at first thought, almost superfluous in an author at this late day to bring forward again the merits of the peculiar treatment of syphilis advocated with so much persistency and ability by Parker and Lee, especially as it has come to be accepted as a reliable and almost routine treatment by very many practitioners; yet, though not indispensable, the work of Dr. Foye will, we think, prove useful and suggestive. As a piece of book-making, it is rather a queer compendium; yet it gives an idea of the whole subject in a small compass, and therefore it will be preferred by some to the larger treatises of the original authors. The main advantages of the treatment may be deduced from the work as follows:

1. A uniformity and reliability of action of the mercurial agent, as compared with its administration in other forms.

2. The rapidity of action, by smaller doses, and with less unpleasant effects, if pushed, than when large doses are otherwise used.

3. Immunity from the symptoms of over-action of the drug, and consequent unpleasant results.

4. That the effects of the drug are sooner perceived, and, from this fact, calculation may be made upon the future usefulness of the agent in the case, so that it may be limited or increased in amount with considerable correctness.

The author alludes to the efficacy of the method in inflammatory and phagedenic chancres, in which instances the vapor may be locally applied. He reiterates what we all know, as to the indications for this treatment in cachexia, and also in such local forms of syphilis as the pharyngeal, laryngeal, and tracheal. The scaling syphilides are peculiarly well suited to this form of medication. Dr. Foye describes an apparatus which does not differ essentially from those used by others. It may be remarked, by way of parenthesis, that many of the cases detailed by Parker and Lee, though undoubtedly syphilitic in nature, are very badly reported, and, in their interesting investigation, the authors have not followed out, as clearly as they might, the natural sequence of the disease.

It is evident that Dr. Foye's enthusiasm for this treatment has induced him to publish this work, which, without being superfluous, may be of use to young men, or those who do not possess the originals. The book is nicely printed, on good paper.

ART. III.—*Transactions of the New York Academy of Medicine.* New Series. Vol. 1. 8vo., pp. xxxvi.–393. New York: D. Appleton & Co., 1874.

WE are glad to witness the appearance in book-form of the deliberations of the Academy of Medicine. The publication seems to be in obedience to the suggestion of the President, Dr. Flint, in his inaugural address in December, 1872 (pp. 236, *et seq.*). The "Transactions" embrace the proceedings of the Society during the years 1871–'73; yet many of the articles which were read, and the discussions on them, have been omitted in the present volume, the gratifying intelligence being furnished that they are "published elsewhere." Notwithstanding this defect, the book contains many valuable articles and discussions. It is to be hoped that the deliberations of this able Society may be published regularly hereafter, and that all the papers of the discussions may appear in full.

Our space does not permit a review of the several articles in detail, but we would direct special attention to the able paper of Prof. A. L. Loomis, "On the History and Treatment of Acute Uræmia," read April 3, 1873. The author recommends the hypodermic use of morphia in acute uræmia, due either to the puerperal state, or to Bright's disease, claiming that there is no danger of fatal coma from its use, but that, on the contrary, it is of benefit, not only by controlling the nervous action, but also by rendering the system more susceptible to the action of eliminatives. The results of the cases reported seem to render the author's position tenable ; and, furthermore, we do not see why opium may not as readily control inflammatory action in the kidney, when it exists, as in any other organ.

Art. IV.—*On Diseases of the Chest: being Contributions to their Clinical History, Pathology, and Treatment.* By A. T. H. Waters, M. D., etc. Second edition. 8vo, pp. xii.–431. Philadelphia : Lindsay & Blakiston, 1874.

The first edition of this work did not claim to be more than a " series of contributions " to the diseases of the chest ; and the present volume, although having received many additions, cannot be considered a systematic treatise upon the above-named class of affections. The additions, however, add to the value of the book, and comprise chapters on the following subjects : " Hæmoptysis," " Hay Fever," Aortic Regurgitation," " Mitral Constriction," " Thoracic Aneurism," and " On the Use of Hydrate of Chloral in Certain Diseases of the Chest." Sphygmographic tracings are also introduced.

Some disparity may be observed in relation to the fullness with which the subjects are relatively treated. Thus pneumonia and emphysema occupy 157 pages out of 271 devoted to the consideration of all the diseases of the lungs, including anatomy. About 150 pages are given to the consideration of diseases of the heart, thoracic anæmia, and the use of chloral and alcohol.

We are disposed to speak very favorably of the work as a whole, and can only hope that in succeeding editions the author will take occasion to give a wider scope to his already practical treatise.

Books and Pamphlets Received.—A Conspectus of the Medical Sciences; comprising Manuals of Anatomy, Physiology, Chemistry, Materia Medica, Practice of Medicine, Surgery, and Obstetrics. For the Use of Students. By Henry Hartshorne, A. M., M. D., Professor of Hygiene, in the University of Pennsylvania. Second edition, enlarged and thoroughly revised. With Four Hundred and Seventy-seven Illustrations. Philadelphia: Henry C. Lea, 1874.

Papers, Chiefly Anatomical, presented at the Portland Meeting of the American Association for the Advancement of Science, August, 1873. By Burt G. Wilder, M. D., Professor of Comparative Anatomy and Zoology, Cornell University, Ithaca, N. Y. Salem, Mass., 1874.

Remarks on Double Monsters. By Edward S. Dunster, M. D., Professor of Obstetrics and Diseases of Women and Children, in the University of Michigan. Delivered at a Meeting of the Washtenaw County Medical Society, held in Ann Arbor, March 17, 1874.

Observations on the Pathology and Treatment of Cholera. The Result of Forty Years' Experience. By John Murray, M. D., Inspector-General of Hospitals, late of Bengal. New York: G. P. Putnam's Sons, 1874. Pp. 58.

Electro-Therapeutics; a Condensed Manual of Medical Electricity. By D. F. Lincoln, M. D., Physician to the Department of Diseases of the Nervous System, Boston Dispensary. Philadelphia: Henry C. Lea, 1874.

The Annual Address before the Philadelphia County Medical Society. By William B. Atkinson, M. D., retiring President. Delivered May 8, 1874. Published by order of the Society. Philadelphia, 1874.

The Twenty-fifth Annual Announcement of Lectures in the University of Nashville, Department of Medicine and Surgery. Session of 1874–'75. With a Catalogue of the Graduates of 1874.

Recent Advances in the Diagnosis of Diseases of the Nervous System. By Horatio R. Bigelow, M. D., Hartford, Conn. Reprinted from the Detroit *Review of Medicine and Surgery.*

On the Origin and Development of the Colored Blood-Corpuscles in Man. By Dr. H. D. Schmidt, New Orleans. Read before the Royal Microscopical Society, January 7, 1874.

Annual Commencement of the Trustees and Faculty of the Medical College of the State of South Carolina. Session of 1874–'75. Charleston, S. C., 1874.

A Report of the Progress of Surgery. By J. W. Trader, M. D., Sedalia, Mo. Reprint from the St. Louis *Medical and Surgical Journal,* June, 1874.

Report of the Board of Health of the City and Port of Philadelphia, to the Mayor, for the Year 1873. Philadelphia, 1874.

On the Construction of the Dark or Double-bordered Nerve Fibre. By Dr. H. D. Schmidt, of New Orleans, U. S. A.

Reports on the Progress of Medicine.

SURGERY.

PREPARED BY SAMUEL B. WARD, M. D.

Ruggi on Extroversion of the Bladder.—In the *Rivista Clinica di Bologna* Dr. Ruggi records his second operation for the cure of this congenital malformation. The projecting vesical mucous membrane formed a tumor measuring about two inches and a half transversly and two inches vertically, bled at the least touch, and contained many points of ulceration. The case was complicated with epispadias the entire length of the penis; the symphysis pubis was wanting. Two flaps of skin were taken from the right and left hypogastric and inguinal regions respectively, measuring rather more than three and a half inches square. The first of these was twisted on its pedicle so that the raw surface was superficial, and the skin corresponded to the mucous membrane of the bladder; the second was moved over on top of this, the skin, of course, being kept superficial. The edges of the two flaps were then united to each other and the surrounding abdominal wall by wire sutures. A secondary operation became necessary, in consequence of non-union at the upper portion of the flaps, and the patient ultimately recovered.

The Future of Operative Surgery for Stone in the Bladder.—Such is the title of an address delivered by Sir Henry Thompson, before the Midland Medical Society at Birmingham, last autumn, and reported in the London *Lancet*. At the opening of his address Sir Henry announced his conclusion that stone in the bladder, like many other maladies, is an exterminable one, so far, that is, as it is painful and dangerous.

Fifty years ago a man with stone in his bladder could only have it removed by the knife—a proceeding serious in middle life, and at an advanced age attended with extreme risk. In 1822 Civiale, for the first time, removed calculi from two patients, by a process of drilling and grinding the stones, with an instrument introduced into the bladder through the urethra. During the next twenty years this new method of operating was probably the cause of increased mortality among stone-patients, an inevitable result of the change from previously elaborated and perfected operation. By slow degrees the almost perfect mechanism of to-day—the light, it might almost be called agile, yet powerful, instrument now in use—has been elaborated from the coarse, heavy, slow tools which were, partly by persuasion and much by force, introduced into the patient's bladder some years ago. In the mean time various efforts were made to improve the cutting operation by reviving or modifying old methods, which resulted in what are known as the bilateral, the median, and the pre-rectal operations.

Attention was then drawn to the necessity, in making up statistics of lithotomy, of always stating the patient's age, since in childhood the opertion is a very safe one, not more than one patient dying out of sixteen operated upon; while between puberty and fifty-eight years, one dies out of every six operations; and, between fifty-eight and eighty years, one out of every three and a half.

Sir Henry then exhibited a tray containing sixty-three calculi, removed by crushing from the bladders of patients whose mean age was over sixty years, among whom there was not a single death. The calculi were, however, all small, not exceeding the size of an ordinary nut, and the speaker stated that when the calculi were of that size he had never yet had a death.

This is certainly a better result than any operator would have a right to expect from any cutting operation, no matter how small the stone. Each was removed at two or three sittings.

The next group of stones exhibited numbered about a hundred, and were larger—about the size of an almond in its shell—requiring at least five sittings for the removal of each, and the mortality was one in twelve or thirteen; still very small.

In the last group of large stones the mortality was still greater, perhaps one in eight or ten, and some of these were on the border-line between lithotomy and lithotrity—a border much wider than might be desired, and yet very difficult to accurately define. The country squire, "who has never been in bed a day in his life," often bears confinement and attacks of irritation less easily than any other patient whatever; while one who is approached from sheer necessity, with fear and trembling, turns out best of all, and astonishes you with his capacity for getting well.

The speaker then laid down the two formal propositions, that "the diagnosis of the presence of stone in the bladder, and its size, is a matter of the highest importance;" and, that "the operation of lithotomy must in future be rejected for all stones that are of moderate size," the remarks pertaining only to the adult patient. The following were said to be the great desiderata with reference to this department of surgery:

1. We want the best operation for the removal of large stones from the bladder.

2. We want the best method of discovering the *existence* of *small* stones in the bladder.

The first point was passed over, as not being within the limits of the discussion, with the assumption that for most cases the lateral operation is probably the best.

With reference to the second, Sir Henry said that he had himself witnessed the sounding of a patient, and heard the result stated in such terms as these: "I am glad to tell you that you have nothing considerable in your bladder; there may be a small stone, perhaps, just possibly; but you have nothing considerable there, so all is well." The patient is congratulated because he has not a stone as big as a hen's-egg, and the presence of a small stone looked upon as a matter of no moment; whereas the discovery of a stone, if it be no larger than a pea or bean, is really a proper ground for congratulation, because it can then be crushed with little or no risk.

In sounding for stone the speaker preferred an instrument of small diameter, so that it shall not be grasped by the urethra; with a round handle, so as to be easily and sharply rotated, by a quick movement of the fingers; and with a short beak, so that it can be turned entirely round in the bladder. The patient should lie down with the pelvis a little raised; the bladder be empty or nearly so; and the sound, held lightly between the thumb and finger, be allowed to glide gently down the urethra; it is five to one that the stone will be grazed as the instrument passes through the neck of the bladder, and if the sound is lightly held, as directed, the grazing will be readily felt. If no stone is found, give the instrument two or three sharp semi-rotations to the right and left; if there is still no result, depress the handle so as to turn the beak below, close to the neck of the bladder, and make two or three similar movements there; this is where the stone will usually be found in the nearly empty bladder. By following the method here laid down, Sir Henry has frequently demonstrated the presence of a calculus smaller than a pea, by the production of an audible note, passed a lithotrite to the spot, and withdrawn the stone uncrushed, as absolute proof. Looking for a small stone in a bladder containing four ounces or more of water is characterized as about as hopeful as "looking for a needle in a bottle of hay."

The statement that stone is most prevalent among children is contradicted; and the error is explained by stating that, though hospital records so show, it is because among the poor such is the case; while the class that are well-to-do furnish the majority of stone-cases at the other end of life.

Sir Henry's description of the usual history of a stone-case is, in brief, as follows: A healthy-looking man, with perhaps a gouty taint, at middle life, finds uric acid, as brick-dust deposit, in his urine; soon after, a small bit of gravel passes, with or without renal colic; after varying intervals, another and another, and then no more for a few months. Some few suspicious symptoms remain, but they are falsely credited to "that little weakness of the bladder which all people have as they get onward in years." These suspicious symptoms are, that micturition is more frequent by day, during movement, than by night, during rest—a condition the reverse of the one produced by "that weakness of advanced years" (prostatic hypertrophy); that a slight sting is mostly present at the close of micturition, and in the end of the penis, while with prostatic trouble the pain (from distended bladder) precedes micturition and is relieved by the act; next it will probably be ascertained that at some recent time, after unusual exercise of some kind, a little blood was observed in the next urine. After listening to such a history, Sir Henry says he feels morally certain that the patient's bladder contains a calculus; the sound is resorted to, almost invariably a small stone is discovered, and perhaps two or more. No anxiety need arise, and the patient may with reason be congratulated, since a small stone is certainly the safest solution of his symptoms. This description is stated to apply to uric-acid and oxalate-of-lime calculus, the phosphatic being, for the most part, of local origin in a bladder incapable of emptying itself.

In conclusion Sir Henry thought that he had fairly proved that the operation of lithotrity is safe and successful for all small stones, and that a stone may be always found when small, if the patient then presents himself; from which it follows, if these be admitted, that lithotrity must be the future operation for calculus in the adult.

Embolus in the Left Middle Cerebral Artery.—Dr. G. H. Lyman reports, in the *Boston Medical and Surgical Journal*, an interesting case of this character, occurring in a patient in the Boston City Hospital. Previous general health excellent, except an attack of typhoid fever ten years ago. Three weeks previous to admission, he had slight rigors, followed by headache, loss of appetite, and rheumatic pains, especially in the right elbow, left shoulder, and lumbar region. These pains still continued on admission to the hospital, except in the elbow. He thinks his breathing has been somewhat embarrassed from the beginning. Temperature 101°, pulse 108, respiration 32. Auscultation and percussion revealed nothing abnormal about the lungs, but a decided systolic murmur at the apex of the heart, and a double murmur over the aortic valves. The following evening the right arm and, in a slight degree, the lower part of the left side of the face became suddenly paralyzed; the tongue protruded very slightly to the left, and *articulate speech was gone. The intelligence remained clear;* he understood what was said to him, but could only utter the one word "Yes" in reply to all questions. Two days later the whole right side of the body was paralyzed completely, and death soon ensued.

The *post-mortem* examination showed the heart to be rather large; on the right side the cavities contained soft clots; the valves healthy. On the left side the ventricle contained a large, soft clot; the mitral valve normal. At the junction of two of the aortic folds was a large, deep, ragged ulceration, perforating both valves, with openings sufficiently large for the passage of a pocket-pencil. Attached to these openings were ragged bits of fibrine, some of which easily fell away, others being firmly adherent. A white, firm plug filled about half an inch of the left carotid artery, partly within but mostly above the carotid canal, completely obstructing the middle cerebral artery to a point a little beyond the posterior communicating artery.

Hemiplegia and loss of articulate speech, without the intelligence being interfered with, are supposed to be pathognomonic, or nearly so, of this affection.

Acute Peritonitis of the Occiput and Upper Cervical Vertebræ.—Dr. Geo. Atwood, of Fairhaven, Mass., reports an interesting case of the above character in the *Boston Medical and Surgical Journal* of March 19, 1874. The patient, a railroad contractor, aged fifty years, of excellent general health, and giving a good previous history, was attacked, in August, 1873, with erysipelas of the face, neck, mouth, and fauces. From this he gradually recovered until he was well enough to go out to ride. About the middle of October painful spasms of the neck and lower jaw came on, and caused great suffering. There was gradual improvement in his condition until the middle of December, when, on turning his head, a "snapping" could be felt by the patient himself, and heard by the doctor who was standing near. On December 31st, immediately after a particularly loud snap, the right arm was perfectly paralyzed, the left partially so, a pricking sensation was felt in the lower extremities, and the patient complained of a sensation of "coming together," which he explained a few days afterward by saying that he felt "as if he was not more than six inches from head to foot." For a few days the discharges were involuntary, and the quantity of urine increased greatly, being also loaded with phosphates during the last week of his life. The paralysis partly passed off, and his condition was again improving, when on January 21st he died almost instantaneously.

"On dissection, the condyles of the occiput, both articulating surfaces of the atlas, the axis and the odontoid process, were denuded and eroded, the latter feeling smooth and like a piece of ivory. No induration of the tissues, and no effusion of pus or lymph, was apparent; but the periosteum and ligaments around the spine, and on the base of the occiput, to the extent of an inch from the foramen magnum, could be easily torn; the softening being more marked on the left side than upon the right, although the tissues generally were of a dull-red color, and softened. The transverse ligament connected with the odontoid process was destroyed, and mobility of the head was quite free."

Bony Union in Impacted Intracapsular Fracture of the Neck of the Femur.—On April 27, 1872, Prof. R. W. Smith presented to the Dublin Pathological Society two specimens, without histories, illustrating the above result. In the first specimen the neck had almost entirely disappeared, and the head rested against the shaft, the articular surface looking almost horizontally inward. A vertical section showed that the head and neck had been mutually impacted, and that osseous union, solid, immovable, and perfect throughout the whole extent of the fracture, had taken place between the fragments, the cells of which communicated with each other, except where the compact tissue of the lower fragment intervened. In the second specimen the bony union was not complete throughout, and it seemed probable that the fracture had occurred no very long time before death. Prof. Smith entertained no doubt that the case would have terminated in perfect osseous union, had life continued for a few months longer. —*Dublin Journal of Medical Science* for January, 1873.

Translations.

The Apophysal Point in Neuralgia.—1. A great many neuralgias present, independently of the painful points determined by Valleix, a fixed painful point which this author has not described, and which has its seat at the level of one or more spinous apophyses of the vertebræ. The existence of this painful point is ascertained by pressing successively on all the spinous processes, commencing at the first cervical vertebra. This painful point is quite distinct from the dorsal point already known in connection with intercostal neuralgia; the latter is seated in the vertebral canal, the former at the spinous processes.

2. This apophysal point appears to be more closely connected with old neuralgias, which relapse or are rebellious to the various methods of treatment.

3. When this apophysal point exists, revulsive applications to the vertebral column (leeches, vesicants, tartarized ointment, etc.) produce a cure with greater certainty than when made to the other neuralgic points, and cure neuralgias which have resisted the other methods of treatment.

4. It is, therefore, in a practical point of view, quite as advantageous to seek for the existence of this painful point in neuralgia as it is interesting in a scientific point of view to ascertain its significance.—(D'Armaingaud in *La Tribune Méd.* and *Gaz. Méd. Ital., Lomb.,* November 9, 1874.) G. R. C.

Treatment of Ulcerations of the Neck of the Uterus.—Dr. Saint-Germain uses medicated *sachets* in the treatment of ulcerations of the neck of the uterus, uterine catarrh, and leucorrhœa. They are made of gauze, five or six centimetres in length, somewhat longer than the thumb, and are filled with dry linseed-meal. These sachets are left in the vagina for three or four days, after having been smeared with glycerine containing the medicated substances.

When there is ulceration of the neck of the uterus without much pain, the sachets are to be smeared with the following: tannin 12 grammes, glycerine 100 grammes.

When the ulcerations are attended by severe pains, the following is to be used: extract of belladonna 8 grammes, glycerine 100 grammes.

In cases of profuse leucorrhœa, without lesions, he prescribes simply sulphurous baths and copious injections of the bath-water.—(*Gaz. delle Clin.* and *Gaz. Med., Ital. Prov. Venete*, No. 2, 1874.) G. R. C.

True Varix of the Falciform Sinus of the Dura Mater.—In a man, thirty-seven years of age, who died of apoplexy, and who had presented in addition to imbecility at twenty-nine years, depending on previous epilepsy, periodical symptoms of melancholy and dementia, and who also manifested a decided tendency to grave cerebral congestions, all the sinuses of the dura mater seemed to be generally dilated, as were also the veins of the pia mater which opened there. There was a sac about the size of a beechnut to the left of the superior longitudinal sinus, and communicating with it by irregular apertures. This sac was full of blood, and had caused the absorption of the corresponding portion of the cranium to such an extent as to leave but a thin lamella of the external table. Just behind and at either side of this point there were two long, thick, osseous spicula.—(*Il Movimento*, February, 1874, *Gaz. Med., Ital. Prov. Venete*, No. 3, 1874.) G. R. C.

Best Method of using Chlorate of Potash in Mercurial Stomatitis.—The chlorate of potash, which is used almost constantly in mercurial stomatitis, pharyngitis, and laryngitis, does not always act as promptly as the physician and patient desire, and it is therefore necessary to resort to other local applications, which are not always harmless.

Prof. Gosselin employs chlorate of potash in such a manner that its action is extremely rapid and energetic, so that other remedies may be dispensed with. A saturated solution is made, and, if the stomatitis is painful, a sufficient quantity of laburnum or cherry-laurel water is added. Pledgets of lint are saturated with this and placed in the sulcus between the gums and the cheek, above and below. These are to be retained for several hours, renewing them if necessary two or three times a day.—(*France Méd.*, No. 5, 1874.) G. R. C.

Torrefied Bread in Diabetes.—The gluten bread which usually replaces ordinary bread in the diet of diabetic patients is somewhat repugnant to the taste. Donney, of Bordeaux, has observed that in patients who were somewhat run down by this diet, the substitution of torrefied crusts of bread soon re-established the digestive functions and removed the extreme thirst. The general improvement produced by the use of bread thus prepared induced him to suppose that torrefaction removed from wheat, at least to a considerable extent, the property of being transmuted into glucose. Numerous careful experiments have proved that wheat-flour, sufficiently torrefied, was no longer capable of producing glucose under the same conditions in which bread was transformed into sugar. A number of diabetic patients were fed with bread prepared from flour previously torrefied, with the best results. —(*Montpellier Méd.*, and *Gaz. Méd. Ital. Lomb.*, No. 8, 1874.) G. R. C.

Action of Digitaline in Renal Disease.—Dr. Bouchard, in the Société de Biologié, called attention to the important fact that in nephritis, and more especially in Bright's disease, the administration of toxic substances has been rapidly followed by intoxication, by reason of loss of the renal function. Digitalia and opium, administered in therapeutic doses, may call forth symptoms of poisoning. In connection with this subject M. Claude Bernard has observed that poisoning by woorara rapidly manifests itself in animals if the renal arteries have been ligated previous to its administration.—(*Gaz. Méd.*, 27, 1873.) E. F.

Chloral Suppositories.—M. Constantin Paul has obtained excellent effects in cases of cancer of the uterus, from the introduction of chloral suppositories into the vagina; more marked hypnotic effects were manifested on placing them in the rectum. His formula is: Butter of cocoa 11 grammes, white wax 7 grammes, hydrate of chloral 6 grammes. M. To be made into six suppositories.

M. Beaumetz does not exceed the dose of 0.25 centigrammes for each suppository, for fear of causing swelling and irritation.—(*Mouvement Méd.*, No. 9, 1874.) G. R. C.

Treatment of Varix by Injections of Hydrate of Chloral.—In view of the fact that hydrate of chloral has the property of coagulating blood, Prof. Porta (*Rivista de Med. e Chir.*) has instituted some experiments in the treatment of varicose veins, and arrived at the conclusion that the above remedy is the best for the relief of this condition. In proof of his assertion he relates the histories of sixteen cases of varices of the legs on which he has successfully operated. The quantity of chloral employed varies from one-third gramme to one gramme, and is not injected at once, but with intermissions; the coagulum forms immediately, and the patient must remain in bed for several days to guard against the occurrence of phlebitis; after this period the coagulum is gradually absorbed and the veins atrophy, or, if remaining permeable, at least cease to be varicose. The accidents which are liable to occur under this plan of treatment are very rare, and not of a grave character: 1. Softening of the thrombus, usually transitory, and not retarding the final result. 2. Phlebitis, which is slight, and ceases in a few days. 3. Limited abscess. 4. A circumscribed eschar of gangrene of the skin, occurring in aged subjects. It is probable, observes the author, that this method of treating varices may be of use in regions of the body other than the limbs. He has already had one successful case of varicocele, and proposes to extend the treatment to subcutaneous nævi, arterio-venous aneurisms, and hæmorrhoids.—(*Revue de Thérap.*, 1874.) G. R. C.

Treatment of Shingles.—After exhausting all the methods advised for the treatment of shingles, and especially the atrocious pains which attend this disease, Dr. Bourdon adopted the following: A stratum of morphinated collodium (collodium 30 grammes, chloro-hydrate of morphine 50 centigrammes) was applied to the diseased parts, without opening the vesicles. The pain ceased on the second day, and after seven or eight days, when the collodium fell off, the vesicles had entirely disappeared, and only a slight redness was apparent.—(*France Méd.*, and *Gaz. Med., Ital. Prov. Venete*, No. 3, 1874.)

G. R. C.

Miscellany.

Appointments, Honors, etc.—The following additional appointments have been made in the Faculty of the University of the City of New York: Dr. Wm. A. Hammond, Professor of Diseases of the Mind and Nervous System; Dr. John T. Darby, Professor of Surgical Anatomy; Dr. John H. Ripley, Clinical Lecturer on Diseases of Children; Dr. F. R. Sturgis, Lecturer on Venereal Diseases. Drs. R. N. Todd, R. E. Haughton, and Wm. B. Fletcher, have resigned their respective chairs in the Indiana Medical College. Prof. D. Clark has been transferred from the chair of Materia Medica to that of Theory and Practice, in the same institution. Dr. J. P. Logan has resigned the chair of Clinical Medicine in the Atlanta Medical College. The Massachusetts Legislature has passed a resolution granting to the family of the late George Derby the amount of his salary for the remainder of the year.

Prof. Cohnheim has recovered his health sufficiently to enable him to resume his professional duties. Prof. Biermer, of Zurich, has been invited to accept the chair of Clinical Medicine in the University of Breslau. Mr. Alfred Cooper, F. R. C. S., has received from the Emperor of Russia the decoration of the Order of St. Stanislaus. We regret to learn, from the *Lancet*, that Sir Charles Locock is seriously ill with cardiac disease. The degree of D. C. L., of Oxford, has been conferred on Prof. Carus, of Leipsic. Prof. Lebert, of Breslau, is about to retire. Mr. Erichsen, the distinguished surgeon and author, intends to visit the United States on a pleasure tour.

Hydrophobia.—The occurrence of two, perhaps three, cases of hydrophobia in this city within a few months has caused a species of panic, and called forth a remarkable number and variety of medical opinions for the public benefit, mostly in the form of letters to the daily papers. The proceedings of the medical societies touching hydrophobia have also been laid before the general reader at great length, and eagerly devoured. All this may be very interesting, but we suspect that the public has been rather entertained than instructed by much that has been published on the subject. It is certainly desirable that everybody should be informed in the plainest terms how to detect the earliest symptoms of rabies in dogs, and how to avoid the dangers that attend it; and in this respect some good may have been accomplished; but the public have no more concern with the pathology, for instance, of hydrophobia than with the pathology of pneumonia, or Bright's disease, and the medical societies should exercise some discretion as to the publication of their papers and discussions *verbatim* in the daily journals. Such proceedings are probably but half understood by the non-medical reader, and for the most part minister only to a useless curiosity. In a professional point of view we deem such publication of purely medical discussions and opinions open to serious objections, and manifestly liable to abuse. Apart from this consideration, it does not appear that any real light has been thrown on the nature of the disease, or that any new medical or pathological facts of much significance have been developed. It still remains true, however, that the chances of death from hydrophobia are about as small as those of death from lightning; though it must also be admitted that, when the disease is once developed, all medical treatment seems utterly powerless to avert or postpone a fatal result.

The New York Medical Register.—The twelfth volume of the *Medical Register* of New York, New Jersey, and Connecticut, for 1874–'75, is the most complete and valuable number that has yet been published, and reflects much credit on the industry and discrimination of the editor, Dr. A. E. M. Purdy. The labor involved in keeping a directory of this kind correct is incessant, and few would be willing to undertake it. Among the new features in the present volume is a directory of streets, giving the names of physicians resident on each, with their respective numbers.

Journalistic Notes.—We have received the first number of the *Psychological and Medico-Legal Journal*, edited by Prof. Wm. A. Hammond and Dr. T. M. B. Cross, and published by T. W. Christern. It contains a variety of fresh and interesting matter, presented by the publisher in elegant and attractive style. The *Journal* will be issued monthly. The enterprising editor of the *Richmond and Louisville Medical Journal* has begun the publication of a new periodical, *The American Medical Weekly*, of which we have received the first numbers. It contains some good original and selected matter. There is room for improvement in paper and press-work, but the low price of two dollars per annum will not warrant extravagance in these respects. We hope the editor will receive substantial encouragement. The *Northwestern Medical and Surgical Journal* has been discontinued, the June number being the last. The editors reserve the right to resume its publication should circumstances render it desirable.

The Late Dr. H. M. Sprague.—At a special meeting of the Yonkers Medical Association, held in Yonkers, June 1, 1874, the following resolutions were unanimously adopted:

Whereas, Death has, for the first time since its organization, entered the ranks of our Association and borne from us one of our most valued members and an esteemed ex-President, Dr. H. M. Sprague: therefore be it

Resolved, That in the death of Dr. Sprague we mourn the loss of a valued brother, a true-hearted, noble man, a skillful physician, and a devoted student of medical science.

Resolved, That we tender to the friends and family of our departed brother our heart-felt sympathy in this dark hour of their affliction.

Resolved, That we attend the funeral of Dr. Sprague, from his late residence in Fordham, in a body.

Resolved, That a copy of these resolutions be sent to the family of Dr. Sprague, and also published in the NEW YORK MEDICAL JOURNAL, the *Medical Record*, and the local papers.

GEORGE F. JACKSON, M. D., *President.*
JOHN PARSONS, M. D., *Secretary.*

Association of American Editors.—The annual meeting of this Association was held in Detroit, June 1st, Dr. W. K. Bowling, President, in the chair. There were present Drs. N. S. Davis, W. T. Briggs, W. S. Edgar, M. T. Stevens, L. Connor, W. T. Taylor, J. M. Toner, and E. L. Howard. After the address of the President, a paper was read by Dr. W. S. Edgar, pointing out the disadvantages of State universities for the education of professional men. After the transaction of some business, the following officers were elected for the ensuing year: President, Dr. W. S. Edgar, of St. Louis; Vice-President, Dr. L. Connor, of Detroit; Secretary, Dr. T. H. Davis, of Chicago. The Society adjourned to meet in Louisville, Ky., in May, 1875.

The Late Dr. McNaughton.—A special meeting of the Medical Society of the County of Albany was held July 2d, to take action regarding the death of Dr. James McNaughton. After appropriate remarks by Drs. Staats, Boyd, Freeman, and Vanderveer, the following resolutions were adopted:

> *Resolved*, That this Society has lost not only the eldest, but also one of its most respected and valuable members. We deplore his loss, and we sincerely mingle our sorrows and regrets with those of the dear ones in the desolate home.
>
> *Resolved*, That we attend his funeral in a body, and wear the usual badge of mourning, and that a copy of these resolutions be transmitted to the family of the deceased.

Gurjun-Oil in Leprosy.—Dr. J. Dougall, of Port Blair, Andaman Island, has published a report of his experience with gurjun-oil in the treatment of leprosy. Of twenty-four cases under treatment during a period of six months, he says that all have been decidedly benefited. The oil is administered internally in combination with lime-water, and is also applied externally to the affected parts. Gurjun-oil is an oleo-resinous product of the *Dipterocarpus lœvis* and other allied trees. Experiments with the new remedy are being made at the present time in St. Bartholomew's Hospital, London, and elsewhere.

Petrifaction versus Cremation.—Dr. Steinbeis, of Würtemberg, proposes to dispose of the dead by placing the body in a trough of cement, and then filling the space with liquid cement, which will harden and convert the whole into a solid mass of stone. The blocks thus obtained may be piled up, buried, or inscribed and set up to do duty as both tombs and tombstones. This method, if generally adopted, possesses some advantages for posterity, as future generations would probably use the obsolete blocks for building-material.

Long Island Hospital College.—The recent commencement of this college was in every respect successful and encouraging. The graduating class numbered fifty-seven, the largest since the college was established. The Faculty is composed of able and experienced teachers, and every year some improvement is made in regard to clinical instruction, for which the Long Island Hospital affords abundant opportunities.

Army Medical Rank.—The bill to reorganize the staff of the army was among those passed during the closing minutes of the session. Among the provisions of this bill is one raising the chief medical purveyor to the rank of colonel. Heretofore this officer has had the rank of lieutenant-colonel. Immediately after signing the bill the President sent to the Senate the name of Lieutenant-Colonel J. H. Baxter, now chief medical purveyor of the army. Colonel S. V. Benet, of the Ordnance Corps, was at the same time sent for promotion to the rank of brigadier-general and chief of ordnance. Both these nominations were confirmed just previous to the final adjournment.—*Washington Star*, June 25th.

A Prize of Two Thousand Francs.—The "Conseil Général du Rhône" announces that a prize of 2,000 francs will be awarded to the author of the best monograph upon the subject of *Foundlings*. The following embrace some of the questions mentioned as worthy of special attention in this connection:

1. Causes which lead to the desertion of infants. What results are furnished by statistics collated at the present time? Do our social, political, and religious institutions have any tendency to increase the number of foundlings? Did the habit of abandoning young children prevail in ancient times? What literature is extant upon this subject? Is it possible to determine the exact period at or about which the custom of deserting infants began to be extensively practised, and under what influences, social and religious, did this change occur? 2. What measures can be suggested, the adoption of which will bring about a reduction of the number of foundlings? What become of foundlings? Compare their condition, moral and physical, with that of other children. 3. What methods can be suggested for ameliorating the physical and moral condition of foundlings, and reducing the rate of mortality which prevails among this unfortunate class? 4. What is the best plan of bringing up foundlings?—*Lyon Médical.*

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from June 14, 1874, *to July* 13, 1874.

Brown, J. M., Assistant Surgeon.—Assigned to duty as Post-Surgeon at Plattsburg Barracks, N. Y. S. O. 131, Military Division of the Atlantic, July 8, 1874.

Byrne, C. C., Surgeon.—Granted leave of absence for six months, with permission to go beyond sea. S. O. 145, A. G. O., July 3, 1874.

Cooper, George S., Surgeon.—Assigned to duty at Benicia Barracks, California. S. O. 60, Department of California, June 17, 1874.

De Hanne, J. V., Assistant Surgeon.—Granted leave of absence for four months. S. O. 138, A. G. O., June 23, 1874.

DeWitt, C. Assistant Surgeon.—Assigned to duty at Fort Macon, N. C. S. O. 103, Department of the South, June 29, 1874.

Dickson, J. M., Assistant Surgeon.—Granted leave of absence for two months, with permission to apply for an extension of two months. S. O. 144, C. S., A. G. O.

Frantz, John H., Surgeon.—Granted leave of absence for four months on surgeon's certificate of disability. S. O. 141, A. G. O., June 29, 1874.

Hall, J. D., Assistant Surgeon.—Leave of absence extended thirty days. S. O. 147, A. G. O., July 7, 1874.

Harvey, P. F., Assistant Surgeon.—To report in person to the commanding general, Military Division of the Atlantic, for assignment to duty. S. O. 144, C. S., A. G. O.

Hubbard, A. B., Assistant Surgeon.—During temporary absence of Surgeon Simons, in addition to his other duties, to discharge those of Medical Director at these headquarters. S. O. 100, C. S., Department of the Gulf.

Kinsman, J. H., Assistant Surgeon.—Assigned to temporary duty at Fort Abercrombie, D. T. S. O., Department of Dakota, June 29, 1874.

Lauderdale, J. V., Assistant Surgeon.—To report in person to the commanding general, Department of the Missouri, for an assignment to duty. S. O. 144, C. S., A. G. O.

Loring, L. Y., Assistant Surgeon.—To report in person to the commanding general, Department of Arizona, for assignment to duty. S. O. 144, C. S., A. G. O.

O'Reilly, R. M., Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Dakota, Russell, Wyoming Ty. S. O. 90, C. S., Department of the Platte.

Randolph, John F., Surgeon.—Assigned to duty as Post-Surgeon at Camp Robinson, Wyoming Ty. S. O. 90, Department of the Platte, July 3, 1874.

Simons, James, Surgeon and Medical Director.—Granted leave of absence for thirty days, on account of sickness. S. O. 100, Department of the Gulf, June 29, 1874.

Vickery, R. S., Assistant Surgeon.—Assigned to duty at Little Rock, Ark. S. O. 102, Department of the Gulf, July 6, 1874.

Obituary.

Dr. James McNaughton, Professor of Theory and Practice in the Albany Medical College, died suddenly in Paris, June 11th, aged seventy-seven years. The deceased had occupied a prominent place in the profession for nearly half a century, and is believed to have been the oldest lecturer in the country. Dr. McNaughton was born in Scotland, and received his early and medical education in his native land, receiving his degree in medicine from the University of Edinburgh in 1816. He came to this country the same year, and soon afterward settled in Albany. He lectured in the Fairfield Medical College for twenty years. In 1840 the Albany Medical College was organized, and Dr. McNaughton was made Professor of Theory and Practice, which chair he had held ever since. In March last he concluded his fifty-third annual course of lectures. Of late years he has been constantly occupied as a consulting physician, his mind retaining its strength and clearness in a remarkable degree. He sailed for Europe with his family only a few weeks ago, in his usual health and spirits, and his sudden death has caused surprise and sorrow to his many friends and associates.

Dr. C. A. Egeberg, one of the most distinguished of Scandinavian physicians, and a well-known medical writer, died in Christiania, June 7th, aged sixty-five years.

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MORBID ANATOMY OF HYDROPHOBIA.

By Dr. William A. Hammond.

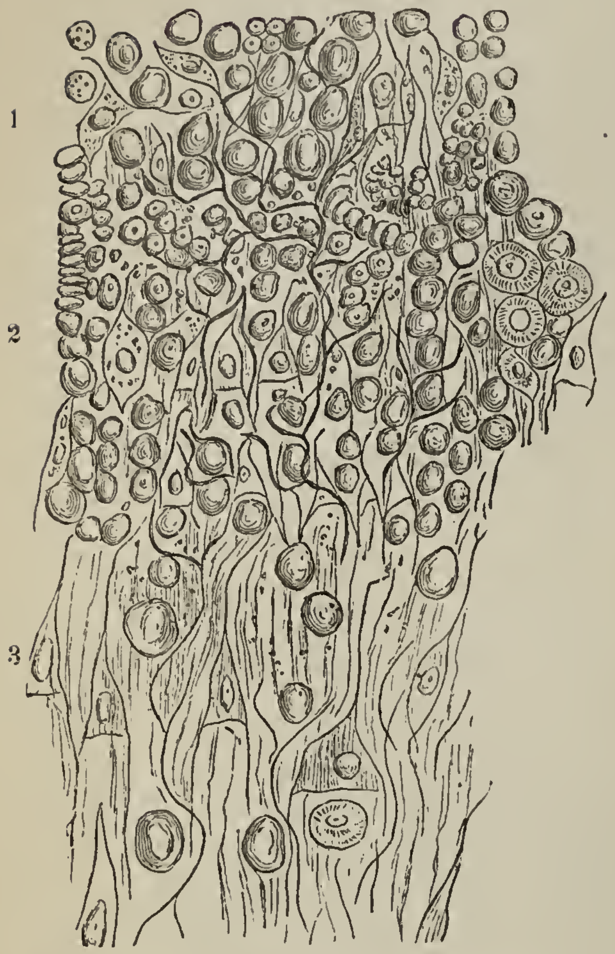

Fig. 1.

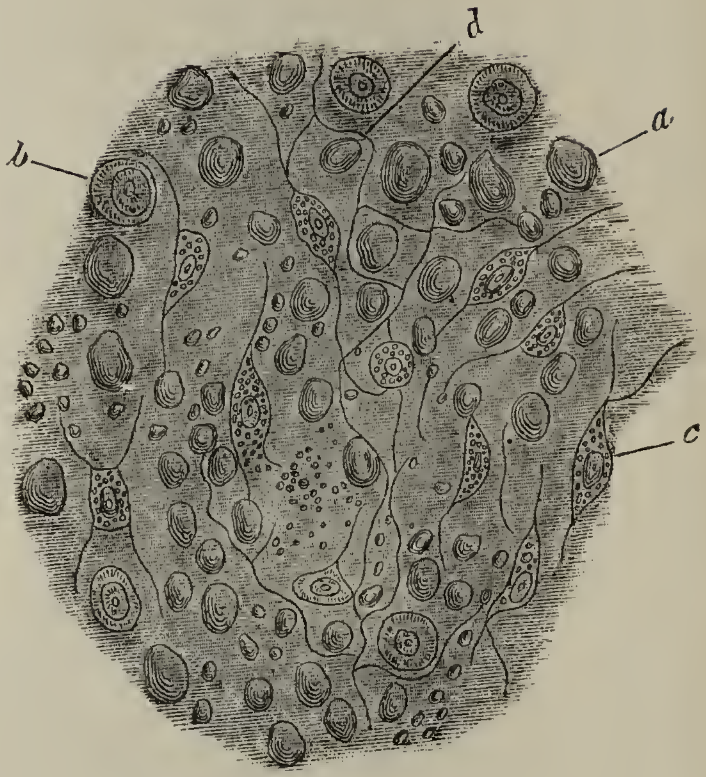

Fig. 2.

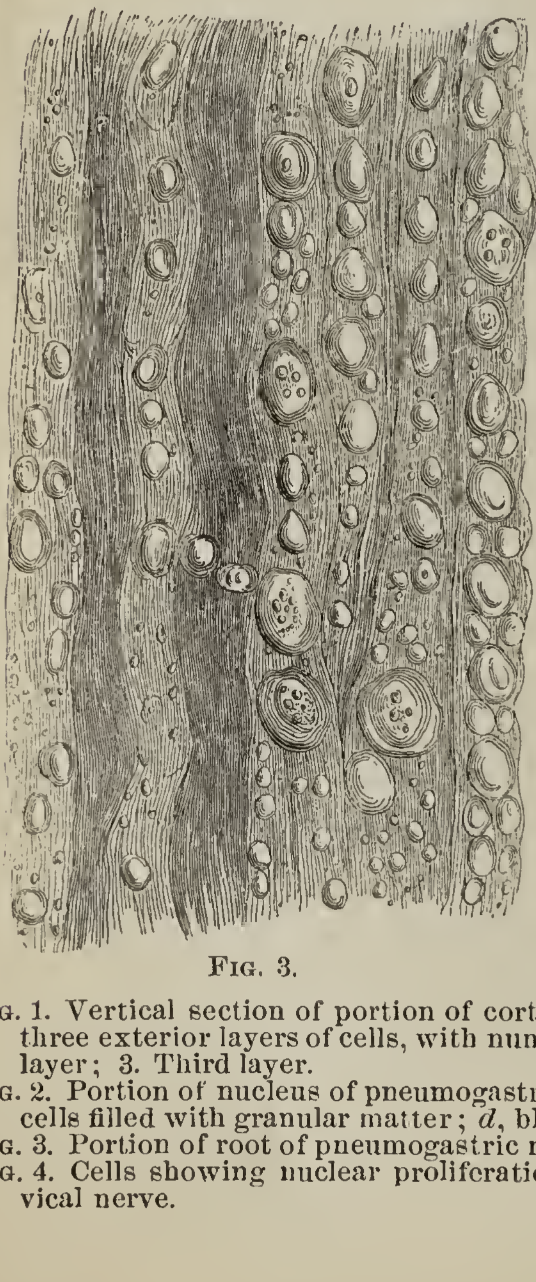

Fig. 3.

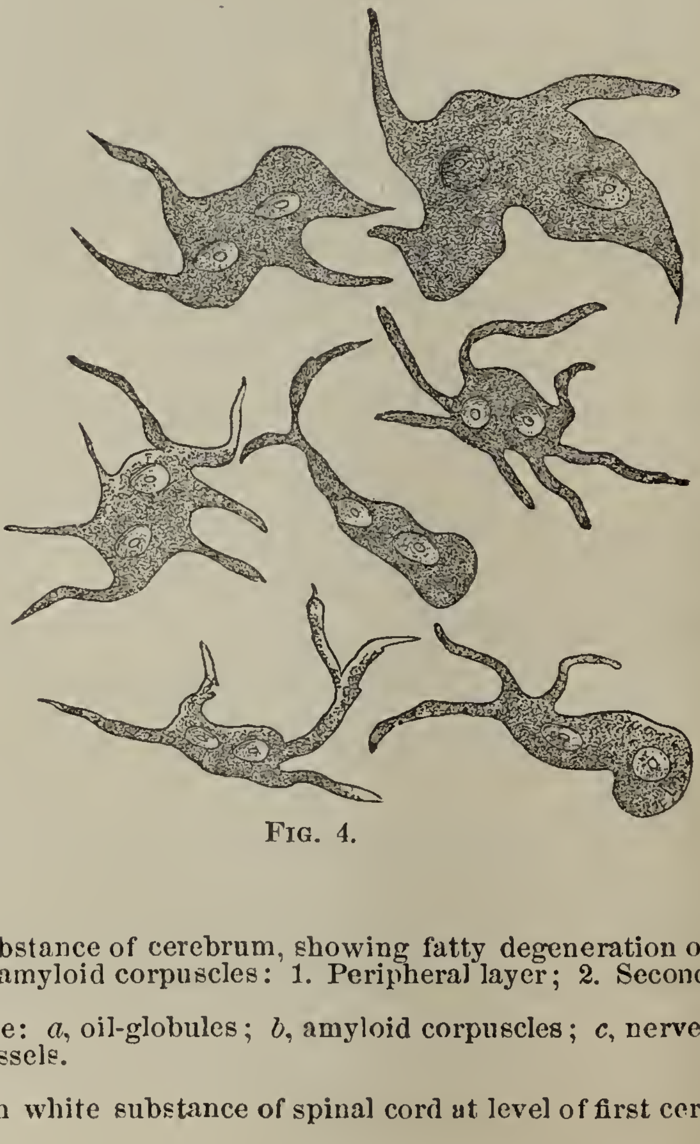

Fig. 4.

Fig. 1. Vertical section of portion of cortical substance of cerebrum, showing fatty degeneration of three exterior layers of cells, with numerous amyloid corpuscles: 1. Peripheral layer; 2. Second layer; 3. Third layer.

Fig. 2. Portion of nucleus of pneumogastric nerve: *a*, oil-globules; *b*, amyloid corpuscles; *c*, nerve-cells filled with granular matter; *d*, blood-vessels.

Fig. 3. Portion of root of pneumogastric nerve.

Fig. 4. Cells showing nuclear proliferation from white substance of spinal cord at level of first cervical nerve.

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Original Communications.

ART. I.—*The Hypodermic Use of Quinine: a Dangerous Experimental Medication, and rarely justifiable.* By STEPHEN ROGERS, M. D.

THE above text is not new to us, as the profession generally know. We have in past years frequently spoken and written to it.[1] The rusty and neglected hypodermic syringes, formerly so actively employed by the expert hands of many of our professional acquaintances, had led us to fondly hope for no further provocation to return to it; but an article in the NEW YORK MEDICAL JOURNAL for March, 1874, by F. D. Lente, M. D., entitled "*On the Treatment of Intermittent Fever by the Hypodermic Injection of Quinine*," convinces us that danger is still abroad.

While we have slight hope of inducing senior members of the profession to keep within reasonable limits with their practice of the prevailing, but pernicious, fashionable hypodermic medication, we feel in duty bound to protest against it, as respects quinine, and to direct our warning to the younger members, whose risks, from the very common untoward results of this unnatural style of giving medicines, are especially great.

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[1] "Transactions of the American Medical Association," vol. xx., p. 229, 1869; New York *Medical Record*, vol. v., p. 262, August 1, 1870; also p. 379, October 15, 1870, and p. 427, November 15, 1870.

Dr. Lente commences his article by quoting sentiments expressed eight or nine years ago, by an anonymous reviewer in the *American Journal of Medical Science.* As it is apparently a part of the history of Dr. Lente's remarkable paper, it will be interesting to know what works on hypodermic medication the said anonymous reviewer reviewed. They were:

1. "Hypodermic Injections in the Treatment of Disease," by Antoine Ruppaner, M. D.

2. "Speedy Relief of Pain by the Hypodermic Method," by Charles Hunter, Surgeon, London.

3. "Clinical Experiences with Hypodermic Injections," by Dr. Lorent, Bremen.

4. "Hypodermic Injections of Medicines," by Dr. Eulenberg.

That part of the review which Dr. Lente has selected as a theme for his paper, relates to this method of administering quinine, and reads as follows:

"We think it would be difficult to exaggerate the importance of the *improvement* in our art, to those portions of our country scourged by malaria, and we cannot refrain from again urging an investigation of its merits upon the profession, *requiring as it does no complicated apparatus, no trained skill in delicate manipulation, but simply a spirit of enterprise, careful observation, and candid report of results.*"

The italics are our own, and we think it well to at once call attention to the fact that, though Dr. Lente adopts this as his text, and declares that he is "fully in accord with its sentiments," he at once proceeds to show how totally untrue are its leading allegations, those which we have italicized. He asserts that he has been two whole years endeavoring to surmount some of the difficulties attending this vaunted improvement in our art, which this reviewer speaks of as requiring little or nothing but "a spirit of enterprise." The details of his labors and experiments to obtain a proper solution of the drug, the minute account of the manner of its use, and the description of the instrument, are convincing evidence that skill, delicate manipulation, and exact apparatus, *are* requisites, this reviewer to the contrary notwithstanding. As respects "*enterprise*," it must, we think, be conceded that, under the circumstances, and in the face of the forbidding history of the hypodermic use of quinine, Dr. Lente's "enterprise" has been amazing. Starting out with the knowledge that, up to the date of his experiments, "almost all the published experiments with this method have been carried on in public institutions," he determined to demonstrate that the general impression in the profession, that this method admits of very limited introduction into private practice, is unfounded. The following is the way he puts it: "With patients who are kept in a proper state of discipline, and by judicious management, nine-tenths will submit to one injection at least; and among those who are suffering from the demoralizing influence of malarial toxæmia, with no let-up to its painful symptoms, there will be no hesitation when the treatment is proposed, with a proper explanation of its *modus operandi*, even though they or their acquaintances may have suffered from local troubles resulting from it. I have injected many patients this year who suffered from troublesome inflammation and abscess last year." (We have no doubt that his patients were well *disciplined*, if not demoralized.) As to the candor of Dr. Lente, in his report of the results of his introduction of the method into his private practice, too high praise cannot, in our judgment, be awarded him. We think, however, it has been extremely damaging, and in all particulars adverse to the very system which his paper and his experiments were intended to advocate. He alludes to the frightful record of *accidents* attending the method, and admits two sphacelations in his own practice, and remarks that when he was a novice in the method, and experimenting with solutions of various compositions, he had many cases of inflammation and abscess, some of which were exceedingly protracted and annoying. But, after he had become skilled in the matter and had discovered a solution which he regards as by far the best of all known to him, he reports one case of dry gangrene of the subcutaneous areolar tissue from its use; diffuse cellular inflammation in other instances, of so severe a character as to induce him not to continue its use; and numbness and tenderness at and about the point of injection, lasting days and weeks.

These he does not regard as "serious troubles," and adds that, in spite of them, some of his patients are anxious to face them, for the superiority of this method of taking the drug over that by the mouth.

But we are elsewhere furnished with a little more light on this matter of the meekness and state of discipline of the subjects of the doctor's experiments, by a clause in his paper, which reads as follows: "Want of time, and the fact that cases under my charge would often pass into the hands of my assistants, and *vice versa*, and that cases of an obstinate character would sometimes be taken *in hand by friends*, or by *nostrum-venders*, and thus disappear, caused more or less confusion in my records." The *italics* are our own.

With this confession, and after a careful perusal of Dr. Lente's illustrative cases, many of which are so loosely and inexactly stated as to render them worthless for any scientific purpose, we return to our sentiments, heretofore expressed, that, as to *favorable* results, his experiments have been a failure.

A notable paragraph of Dr. Lente's paper is the one on the history of the various solutions which have from time to time been put forward by the advocates of this method. He disposes of them summarily by declaring that he found them impracticable, and of the ethereal solution which has had such enthusiastic advocates as Bartholow in this country, and Otto in Europe, he speaks in strong terms of disapprobation. We do not doubt that these gentlemen will, in turn, speak in the same manner of Dr. Lente's solution, which we have seen, even in his own expert hands, is dangerous. No solution like Dr. Lente's can be free from danger, as a matter of chemical fact. It is so near saturation, that even the reduction of its temperature to 50° results in a deposit of the salt. The instant such a solution is thrown among the tissues and the vessels of the body, moistened and filled, as they are, by alkaline and albuminous fluid, its solvent power is, to a greater or less extent, reduced, and precipitation takes place. It is hence very manifest that no solution but a neutral or alkaline one, or one with great excess of acid, can be expected to escape this result. He, therefore, as other experimenters in this line before him have done, truthfully remarks that "there is more danger in using too little acid than too much."

The addition of carbolic acid to Dr. Lente's formula, he regards as giving additional security against accidents, though he suspects it to be the cause of a more or less extensive *numbness* about the point of puncture, witnessed in his cases. We regard it as the application of another delusive but extensive therapeutic fashion of the times. Few substances have ever enjoyed a more specious repute and confidence among the profession than carbolic acid.

Dr. Lente's solution, we believe, would be better without it. We do not wish to be understood as denying therapeutic value to carbolic acid. If appropriately applied it is valuable, and we frequently prescribe it.

That the general practitioner may comprehend the confusion which has resulted from the unscientific and inexact language used by the experimenters in, and advocates of, hypodermic medication with quinine, and perhaps, at the same time, some of the more common causes of the disasters attending it, we will devote a little space to the observation of Dr. Lente, that some of these proposed solutions are "extraordinary mixtures." We think it a fair inference that, by this expression, he means us to understand that he cannot see why they should ever have been advocated, as safe and proper, by intelligent and rational men; that he thinks it wonderful that any good results were ever obtained from them. Six years ago, Dr. Bartholow, in the "Transactions of the Medical Society of Connecticut," advocated the ethereal solution of quinia. Unsophisticated believers adopted his formula. We will here simply quote what one of them reports of his results. Of one case he says: "Desiring to rapidly quininize the patient, I injected under the skin of the arms six grains of quinine in ethereal solution." Tumefaction and great soreness followed, and fatal tetanus at the end of twelve days. This was the fourth out of ten cases of the hypodermic use of the solution so much praised by Dr. Bartholow, in which this follower had had reason to regret resorting to it.

Now, Dr. Lente avers that "quinine is so nearly insoluble in ether that for all practical purposes it may be so considered." These look like perfectly contradictory declarations, and we mean no disrespect to the average practitioner, when we add that we believe he will so regard them. The facts are, that Dr. Lente refers to the sulphate of quinia, and his statement is true, while Bartholow means *quinia.*

As regards the reliability of Dr. Bartholow's formula or statement as a practical guide, we prefer to avail ourselves of the statements of practical pharmacists. Neergaard, of this city, whose eminence in this department no one will question, informs us that even were quinia soluble in ether, as the formula above referred to leads us to believe, its cost in the market is about double that of the sulphate, and, therefore, as a matter of economy, would not succeed. But, in fact, the quinia of commerce is but slightly soluble in ether. Hence the elaborate formulæ which have at various times and places been published as guides to obtain an ethereal solution of quinia for hypodermic use.[1]

One will soon be convinced, by consulting these sources of information, that a reliable ethereal solution of *quinia* is practically unknown, and that medical journal and prize-essay reports of it are a delusion and a snare. And after the strict observance of all these details of chemical manipulation, and a solution of questionable strength and excessive volatility of constituents is obtained, what are the results? Local inflammation, gangrene, abscesses, tetanus,[2] and the very possible accident of throwing the fluid into a vein, where the warmth of the blood would almost certainly volatilize the ether and produce fatal result from heart-paralysis.

An ethereal solution, such as we here refer to, must always, as a chemico-vital fact, be attended by extreme danger of troublesome local accidents, so called. Ether of the strength required for such a solution will coagulate albuminous fluids almost as promptly as nitric acid. Hence such a mixture cannot be thrown into the tissues of the living body without the formation of more or less albumen coagulum about it. This coagulum contains an uncertain amount of the article in solution, and at once becomes a foreign substance in mass, to be slowly removed by disintegration and absorption, or by suppuration and discharge. We are convinced, by a recent and afflicting experience, that a like result follows the introduction of strong alcoholic fluid into the subcutaneous areolar tissue. We therefore believe that neither strong ethereal nor alcoholic liquids can be safely injected under the skin.

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[1] "*American Journal of Pharmacy*," vol. xliii., p. 303, July, 1871, by Charles Rice, Pharmacist, Bellevue Hospital, New York. J. C. Wharton, Pharmacist, *Nashville Journal of Medicine and Surgery*, September, 1873.

[2] *New Orleans Journal of Medicine*, April, 1870; *New York Medical Record*, vol. v., p. 167, June, 1870.

Of another advocated solution—in glycerine—he remarks, that, though a good solvent, "it is irritating to the cellular tissue, very slow of absorption by it, and very prone to flow away from the small puncture after its injection." How this accords with what we understand is a very prevalent practice, of using it hypodermically as a solvent of ergotine, will some day appear. It is due Dr. Lente to say that he treats the subject of the possible accident of tetanus, resulting from the wound required for an hypodermic injection, with becoming seriousness; not at all with the levity which marked Bartholow's observations on the subject, when we called his attention to it some years ago. In addition to the cases of tetanus from this cause, quoted by Dr. Lente, we respectfully call his attention to the American case which may be found at the reference last given. Dr. Lente very properly advises against exposing patients to this untoward liability in localities with known tendency to tetanus, and closes by remarking that, "in such localities, no prudent physician would subject his patient to such a risk."

From the disadvantages of this method we will now turn to the examination of its alleged advantages over the more common and safe methods. Having commenced his paper with the laudatory remarks and the quotations we have given, and after a very considerable experience, Dr. Lente sums up as follows:

1. This method seems applicable to pernicious or congestive fever, in which the patient may die in collapse, "*because neither the stomach nor rectum will absorb medicine, even if they could retain it and there were time for it to act.*"

This assumes a fact of whose existence no surgeon or physiologist has any knowledge.

More than twelve years ago we wrote in regard to the use of quinine by the rectum, in just such cases as Dr. Lente refers to, as follows:[1] "I have seen such cases apparently saved from destruction by a few grains of quinine in solution by the rectum." Again, in the same paper, we say: "I have never seen any thing in the use of quinine more satisfactory than the promptness of its action in such cases, in quieting the circulation, hurrying on perspiration, and restoring consciousness. In these cases the medicine will generally have to be given by the rectum, and must be introduced in solution, or much of it will be lost, for very well-known physiological reasons."

An experience of six years, and among large numbers of people from Europe and North America, in a most intensely miasmatic tropical locality, gave us ample demonstration of the truth of the above remarks. We know that the condition in which the rectum will not promptly absorb a clear and moderately strong solution of quinine is extremely rarely met with. We regard the idea that absorption will take place from the subcutaneous areolar tissue in cases where the rectum will not absorb, as an assumption which is supported by neither therapeutical experience nor physiological experiment.

Dr. Lente appends to his paper, as a note, a paragraph from a report by Dr. Mursick, of Nyack, for the evident purpose of supporting the doctrine that the rectum is not to be depended upon for absorption. It reads as follows: "I have given quinine by the rectum, both in septicæmia and in pyæmia, but its absorption into the system was so slow that little if any good was accomplished by it. Had I given it by hypodermic injection, I have no doubt that my success would have been greater."

Suspecting some error in the manner of this use of quinine by the rectum, we obtained from Dr. Mursick the following statement: "The menstruum used by me for the exhibition of quinine, *per rectum*, was simply beef-tea. A solution of quinine, of the strength of five grains to the drachm, was added to from two to four ounces of beef-tea, and thrown into the rectum."

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[1] "Transactions of the State Medical Society," pp. 200, 201, 1862.

The chemical result of this mixture is, that a very considerable part of the quinine precipitates and is not absorbed. All undissolved portions of the beef-tea remain in the rectum, and embarrass absorption, so that the two causes together render this manner of administration scarcely less defective than that recommended by Dr. Bartholow, viz., by "suppository or by clyster," of which we once remarked: "The rectum is not a digestive organ; therefore substances introduced into it which require digestion, or not in solution, are slowly and very partially appropriated. Of these are quinine suppositories and quinine in clysters of water or some emulsive fluid. But, when perfect watery solutions are introduced, they are very rapidly taken up."[1]

It is therefore plain that beef-tea is not a proper menstruum for the introduction of quinine into the rectum, even in solution.

As to the comparative time required for absorption from these two points, we years ago wrote as follows: "The occurrence of circumstances under which the alleged advantage, as to time, of the hypodermic method over that by the rectum, can be of any appreciable value, will be exceedingly rare, if indeed ever."[2]

The Scientific Committee of the London Medico-Chirurgical Society found that absorption of quinine from the subcutaneous areolar tissue, as well as from other parts, was liable to great variations as to rapidity. In the case of the areolar tissue, the committee found the time to vary from four to thirty-five minutes, while from the rectum it varied from ten to forty-five minutes; five grains, in one instance, being absorbed from the areolar tissue in eight minutes, and from the rectum in ten minutes. The committee remark that, as to the effect of the quinine, the difference between its administration by areolar tissue and mouth is "more marked than between the *rectum* and areolar tissue." The fact is that, both as to promptness and activity, the difference between the areolar tissue and rectum is practically nothing, if our experience with the latter method be compared with that reported of the former by various experimenters.

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[1] "Transactions American Medical Association," vol. xx., note at p. 233.

[2] Ibid., 1869, vol. xx., p. 230.

Dr. Lente gives a case illustrative of the uncertainty of absorption from the areolar tissue, wherein the fluid was hardly absorbed at all, but exuded drop by drop for hours from the puncture. We therefore hardly need remark that, under any of the supposed conditions of *malignancy*, *irritable stomach*, or protracted *quotidian* form, adduced by Dr. Lente, there is no demonstrated necessity for the hypodermic use of quinine. The same is unquestionably true where "pain or other distress is a prominent symptom." The doctor very positively asserts that quinine, "administered hypodermically, seldom induces severe cerebral symptoms." This reminds us of the allegations we used to hear about morphia thus employed, that the secondary unpleasant effects of the drug were scarcely felt —statements totally at variance with the truth. If Dr. Lente will introduce into the circulation the same amount, or any thing like the same amount, by the hypodermic method, as that which produces cerebral symptoms when given by the mouth or rectum, he will get the same symptoms.

"Severe cerebral symptoms," however, are not required in the treatment of disease by quinine in any form. The manner of the introduction clearly has nothing to do with the results. By this we are reminded of the oft-alleged increased permanency of medicine thus employed, and quoted by Dr. Lente, though he does not distinctly indorse it; indeed, many of his cases go to disprove it. On this matter we long ago wrote as follows: "As to the claimed permanency of action, I cannot but suspect that there has been some error in the observations which led to such a conclusion. The very fact that the medicine is promptly absorbed is sufficient reason to look for its prompt elimination. Hence its effect will not, in any physiological probability, be more permanent."[1] We have not yet met evidence that this opinion is unfounded.

As respects the economy of the method, to which idea Dr. Lente subscribes, we see nothing in his report of cases to change our sentiments expressed years since as follows, after a very careful examination of the then available evidence: "While there is a very decided economy of quinine in its hypodermic use, as compared with its usual *extravagant* employment by the mouth, in miasmatic fevers, there is very little economy if it be given by the mouth in necessary amounts only, and that the saving is still less when compared with its proper use by the rectum." This is an estimate deduced from actual statements of quantities, but Dr. Lente has frankly introduced another element of expense, very uniformly attendant on the hypodermic method. After showing that the average number of grains injected in each of the one hundred and ninety-seven patients, of all classes, which for the present we will suppose to have been cases of intermittent fever—though, from the confusion of the record, it is impossible to tell what the disease was—was about twelve grains, and admitting that some of the successful cases took the medicine by the mouth, as well as by the syringe, in the same manner they used to do at the New York Hospital, he states that, on account of the soreness at the point of injection, when the patient is at manual labor, "it is better to select the left arm, though they are rarely incapacitated for labor even half a day." This we presume to mean that, after such an injection, disability, on account of pain, irritation, and inflammation at and about the wounded part, is very common. Indeed, Dr. Lente furnishes support to this presumption by stating that he "usually makes the two punctures two and a half to three inches apart, so that the wet application, which is often desirable, *to prevent inflammation*, may cover both."

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[1] "Transactions American Medical Association," vol. xx., 1869, p. 231.

It is therefore plain that the aggregate disability resulting from this method practised among laborers, mechanics, soldiers, or sailors, would be so great as to constitute an important item in this account of economy. We are thoroughly satisfied that, even admitting the possibility of preventing or "curing" miasmatic disease, with much less quinine used hypodermically than by mouth or rectum, the time lost by the consequent soreness, inflammation, or suppuration, as the case might be, or all together, would make it, as a method, the most expensive to the individual, or company, or government, or institution, of any known.

To illustrate this belief, we state that a lady patient of ours has been crippled for a month recently, not by quinine injections, but by one morphine and three brandy injections of twenty drops each in the legs. Had she been a laboring woman or man, that month of disability would have been worth ounces of quinine.

We do not therefore see the force or foundation for Dr. Lente's conclusion that the "advantages of the system in an economic point of view are manifest in armies, hospitals," etc.

We will allude to one more statement of Dr. Lente. He says that another essential difference between the action of quinine by the mouth and when introduced hypodermically is, that in the latter way it promptly imparts a feeling of vigor and hopefulness seldom observed in the former.

We have no doubt that if the red-hot iron were introduced into and under the skin, in place of the injecting-needle, a feeling of vigor would be as promptly imparted. Let those try it who doubt.

This whole subject may be epitomized thus:

1. The hypodermic method of giving quinine involves a surgical operation of considerable discomfort, not to say pain, and hence should not be employed unless under circumstances rendering it indispensable.

2. The operation is extremely liable to be followed by more or less severe and protracted local inflammation, abscess, and very possibly tetanus. It should therefore be avoided if possible.

3. It is very easy to avoid these pains, discomforts, and dangers, without, in the slightest degree, lessening the chances of recovery of the victim of miasmatic disease.

4. The risk connected with the hypodermic method is not at all necessary, for the available means to accomplish the results which that method claims are abundant, and in no respect less reliable or more expensive.

The paper, for one of its class, is more than usually candid and less liable to the application of the sentiment of the couplet—

> "What is hit is history,
> But what is missed is mystery"—

than average records of experiments where made to establish a theory.

Incidentally, Dr. Lente has done humanity a positive good in his paper. He states that, since the adoption of his favorite solution of quinine for hypodermic use, he has had no more trouble than with injections of morphine.

"All hypodermic injections, however small, will occasionally cause inflammation, abscess, and even sloughing, sometimes of a persistent character."

In view of Dr. Lente's recorded results with his favorite solution, he could hardly have said a severer thing of the mania for hypodermic medication which has prevailed as a world-wide epidemic these last few years. Like most fashions in the practice of medicine, it started from a discrete and appropriate application of physiology. Few of the fashions, however, from the days of Sangrado's bleeding and hot water, have been carried to more ridiculous and destructive extremes than this wild fashion of medicating mankind under the skin. Fatal results, strictly attributed to the method, have frequently occurred from the commencement of the fashion, and bare escapes from this calamity in still greater numbers. These consequences, not to allude to abscesses, obstinate ulcers, and chronic and disabling indurations, have induced misguided but prudent physicians, in great numbers, to abandon this mode and lay aside their syringes. They see that disease can be treated quite as successfully, and at less risk of doing irreparable harm without it, though they have occasion to deplore the loss of the *éclat* which the flourish of instruments and the production of pain were wont to bring them. While this is true of many, unfortunately for humanity, there are still too many practitioners who are pursuing this method with all the ardor of a new idea.

To such an extent has this infatuation reached in some, that it is positively hazardous for a person with a pain or an ache to be near them, for they are as liable to suffer a puncture as they would be to be stung in the presence of bees.

ART. II.—*On Some Forms of Kerato-iritis and their Effect in hindering the Osmotic Action of the Cornea and Conjunctiva.* By CHARLES S. BULL, A. M., M. D., Ophthalmic Surgeon to Charity Hospital, Assistant-Surgeon to the New York Eye and Ear Infirmary, Microscopist to the Manhattan Eye and Ear Hospital.

OPHTHALMOLOGISTS not uncommonly meet with cases of kerato-iritis, in which atropine, applied locally, seems to produce little or no beneficial effect in allaying the inflammatory symptoms, and in which the pupil dilates but little or not at all, though there may be no posterior synechiæ present. Why is it that, in some cases of corneal inflammation, atropine acts promptly and beneficially, while in others it is apparently an inert agent? Is there a *peculiar* kind of corneal or iritic inflammation, in which atropine is useless as a remedial agent, and is this form of inflammation marked by any one symptom or chain of symptoms, which may be regarded as pathognomonic?

The cases in which the writer has observed this peculiarity were all chronic, and did not present themselves for treatment until the disease had already lasted several weeks, and in some cases months. In all of them the iris was more or less affected, the nature of the iritic inflammation being generally serous. The keratitis was generally somewhat diffuse, sometimes circumscribed, always parenchymatous, and the corneal epithelium was generally wanting over a greater or less extent of surface. Sometimes the cornea seems to be the seat of a regular abscess, which is afterward converted into an open ulcer by a portion of necrotic corneal tissue sloughing away. The iris is always discolored and generally swollen, but yet does not present the bagging, bulging appearance which accompanies complete posterior synechiæ, with effusion into the posterior chamber. There are no vessels visible in the cornea proper, except at the periphery, where we meet with the loops of the fine branches of the anterior ciliary arteries going to the conjunctiva. These patients have remained under treatment for weeks at a time without any improvement being visible, and have then suddenly taken a turn for the better. They are not distinguished by any one symptom or chain of symptoms from other cases of parenchymatous keratitis, except by their obstinacy in resisting treatment. They are accompanied by little or no pain, and by but little photophobia. The keratitis does not seem to be a manifestation of the strumous diathesis, nor of any other particular constitutional dyscrasia, but is apparently a purely local trouble.

Is the inertness of the atropine due to its not being absorbed, or to some other reason? If it is not absorbed, is it because the corneal inflammation has so changed the cornea that it has lost the properties of an animal membrane, or is it owing to some defect or obstruction in the circulation; and, if the latter, can the sympathetic nerve be brought in as a factor in the case?

When the coats of the eye are in the normal condition, we know that a solution of atropia is absorbed directly by the corneal tissue as well as by passing into the circulation through the conjunctival vessels. In considering the osmotic action of the cornea, we must regard it as an animal membrane. We know that *one* condition of the penetrability of porous bodies by liquids, or their power of absorption, is the faculty of becoming moistened, or the attraction which is set up between a molecule of fluid and the walls of a pore, which, in the case of the cornea, means a lymphatic space; another condition is the attraction which one molecule of liquid has for another. We also know that the molecules of liquid, having once entered an animal membrane, are retained in the pores of the membrane by the same two conditions of attraction existing between the walls of a pore and the different molecules of fluid, and by the cohesion acting between different molecules of the same fluid. Another circumstance to be taken into consideration is, that the state of humidity or moisture of the animal substance and its absorbent power for liquids exercise a certain influence upon the rate of transmission of a fluid through its tissues. Of all fluids, distilled water is absorbed in the largest proportion, and the power of absorption of saline solutions diminishes as their concentration increases.

Now, in order that a solution of atropine may transude the cornea and pass into the anterior chamber, some of the aqueous humor must drain off from the anterior chamber, otherwise there must be an increase of intra-ocular tension, which, if maintained, would lead to grave trouble. This may or may not pass through the cornea outward, though experiments of somewhat recent date would lead us to believe that the aqueous humor never transudes the corneal tissue, no matter how great the intra-ocular tension may be which is brought to bear upon the cornea. If these experiments, however, be not true, there is a mingling of the aqueous humor and the solution of the atropine as well in the tissue of the cornea as in the anterior chamber, which takes place in the pores or the lymphatic spaces of the cornea. The connection between a membrane and the rate of its osmotic action we know to be very intimate, and, in those cases of keratitis where atropine acts much less promptly than in others, this is probably due, in great part, to the condition of the cornea. In inflammation all the physical laws of health and nutrition are interfered with, and the tissue inflamed, and every thing that takes place in and around it must be regarded as morbid and abnormal. It is natural to suppose that the well-known laws governing osmotic action are interfered with in such a case. The chemical combination or union of two liquids, separated by an animal membrane, only takes place when the force of attraction is stronger than all the obstacles against which it has to contend. When the membrane is healthy, it exercises no direct influence upon the osmotic current, if the temperature remain the same throughout the experiment.

If we agree to regard the cornea as filled with hollow, very narrow spaces, the lymphatic spaces, and admit that the solution of atropia passes through and meets in the substance of the cornea with the aqueous humor, there ought to be just as strong a current in one direction as in the other, always premising that the corneal tissue is healthy. When the cornea is the seat of the inflammation, the power of absorption may vary in different portions of the membrane. In keratitis, the cornea is very often thickened, which of itself would alter its osmotic power, for it is a well-known fact that the rapidity of the two currents of endosmosis and exosmosis depends upon the thickness of the membrane separating the liquids. Some supposed that, when the parenchyma of the cornea is inflamed, the membrane of Descemet, or rather the single layer of hexagonal cells upon the posterior surface of the cornea, exerts a great influence upon the absorptive power of that membrane, but this is as yet a mere hypothesis in the pathology of the cornea.

But the cornea is not the only tissue concerned in the absorption of atropine. The blood-vessels of the conjunctiva are to be considered under this head, and perhaps play a much more important part in the process than the cornea itself. They possess one condition which is very favorable to absorption, viz., within them is contained a fluid which circulates, which moves at a certain rate, a condition which physiology teaches us is more favorable for promoting the osmotic action than when the two liquids are quiet. Here the wall of the blood-vessel represents the membrane, while the fluids are represented by the blood on one side and the solution of atropine on the other. This motion of the blood in the capillaries favors imbibition by removing that portion of the fluid which has already been absorbed and carrying it forward in the circulation.

The question may now be asked, What influence the state of the sympathetic nerve exerts upon the osmotic or absorptive power of the blood-vessels of the conjunctiva. We know, from Broussais, that the great sympathetic gives off throughout its course three kinds of branches; the muscular, the visceral, and the vascular. The latter are sent to the arterial and capillary branches which supply blood to the different organs of the body, embrace the vessels, and form plexuses around their coats. These arteries are furnished with nerve-twigs as often as they pass by a ganglion or a plexus, while the veins and lymphatics do not receive any nerve-supply from the sympathetic nerve. Now, in inflammation of a part, the arteries of the part involved dilate, become thicker and larger, and pulsate more strongly, while, on the subsidence of the inflammation, they revert to their original size and state. All this is a manifestation of organic sympathy due to the action of the sympathetic nerve. Now, if the vessels are dilated and pulsate more strongly, the blood must course through them more rapidly, and thus favor the process of imbibition. Hence we may conclude that a solution of atropia is not only absorbed more rapidly in such a case, but more of it is absorbed, and that the characteristic effect upon the pupil ought to be produced so much the more rapidly, provided that there are no posterior synechiæ present. But in the class of cases under consideration the pupil does not dilate, and hence we must look yet farther for a satisfactory explanation. We now turn our attention to the iris, and consider it with special reference to its muscular action and nerve-supply. We know that the muscular tissue of the iris is of the non-striated variety, and is arranged in two different ways, with a more or less intimate connection between them. Some of the fibres are arranged in a circular direction around the margin of the pupil, forming what is called a sphincter muscle of the iris, and these fibres run very closely together. Other fibres run from the external margin of the sphincter muscle in a radiating direction toward the periphery of the iris, but are arranged in bundles or fasciculi, each fasciculus being separated by a greater or less distance from the neighboring ones, the space being occupied by elastic tissue. We know that the diminution in size of the pupil is a double act, consisting of a relaxation of the radiating muscular fibres and a contraction of the circular fibres or sphincter muscle, while in dilatation of the pupil the reverse is the case.

We know that the nerves of the iris are branches of the ciliary nerves, and consist of three sets, viz.: 1. Pale fibres, probably belonging to the sympathetic nerve, which run toward the posterior surface of the iris and ramify *probably* in the dilatator iridis or radiating muscle. 2. Fibres which run on the anterior surface of the iris, which are its sensory fibres. 3. Motor fibres running to and in the sphincter muscle (Iwanoff, Stricker's "Gewebelehre," page 1047). In other words, the ciliary nerves supply motor, sensory, and sympathetic fibres to the iris. They all arise, with the exception of one or two branches which come directly from the naso-ciliary nerve, from the ciliary ganglion, which is situated on the external side of the optic nerve, about three-quarters of an inch behind its entrance into the globe. This ganglion has three distinct roots: *one*, the short or motor root, from the oculomotorius or third pair; *another*, the long or sensory root, from the naso-ciliary nerve, which is a branch of the ophthalmic branch of the trigeminus or fifth pair; *the third*, some fibres of the sympathetic, coming from the carotid plexus out of the cavernous sinus, through the superior orbital fissure, and generally reaching the ciliary ganglion itself, though sometimes it is joined with the long or sensory root before the latter's union with the ganglion.

It is well known that the normal movements of the iris occur in consequence of the irritation of the retina by the light, the transmission of this irritation from the retina, through the medium of the optic nerve, to the brain, and the reflex action of the oculomotorius. If the optic nerve be divided within the skull, the pupil dilates and remains so permanently. Division of the oculomotorius produces the same effect. Irritation of the motor oculi causes contraction of the pupil, and irritation of the sensory branches of the trigeminus gives the same result. Division of the trigeminus simply destroys the sensibility of the parts supplied by it, but does not disturb the relation existing between the optic nerve and the oculomotorius. A permanent contraction of the pupil has been observed in animals when the sympathetic nerve has been divided in the region of the third or fourth cervical vertebræ, and this depends upon the fact that the radiating fibres are paralyzed. A contraction of the pupil therefore follows, either in consequence of an increased action of the oculomotorius and the sphincter muscle, or in consequence of a weakened influence of the sympathetic nerve upon the radiating fibres.

Dilatation of the pupil follows in consequence of the weakened influence of the oculomotorius upon the sphincter, or in consequence of the increased influence of the sympathetic nerve upon the dilatator pupillæ.

Paralysis of the oculomotorius or of the ciliary nerves always causes dilatation and immobility of the pupil, that is, mydriasis. Atropine paralyzes the ciliary nerves, and irritates the dilatator pupillæ.

Now, it has been known for many years that division or injury of the fifth pair of cranial nerves within the cavity of the skull, or of its ophthalmic branch, is followed by an inflammation of the eye of the same side, which usually progresses to complete destruction of the organ. Immediately after the operation or injury, the pupil contracts, and the conjunctiva and cornea lose their sensibility. At the end of a varying period, the cornea becomes slightly cloudy, and, by the second day, the conjunctiva is already inflamed. The inflammation increases in intensity, and soon spreads to the iris, which becomes covered with a layer of inflammatory exudation. The cornea constantly grows more opaque, and may eventually ulcerate, and the contents of the anterior chamber, and even the lens and vitreous humor, may be evacuated, and the eyeball then collapses. We learn from Brown-Séquard that the same thing occurs after section of the lateral half of the spinal cord.

Now, in this form of trigeminal neuralgia or inflammation, whichever it may be, the effect produced upon the cornea is invariable and almost characteristic. The cornea is, as it were, paralyzed, cut off from its nerve supply, and the process almost invariably results in destruction of the cornea, unless one plan of treatment be resorted to, and even then we do not always succeed in staying the process of disintegration. The plan consists in closing the eye by a bandage, which is kept on continuously, and only removed to admit of an examination of the eye, the object being to protect the cornea from the injurious influences of light and air, and floating dust. Now, although the symptoms and course of this necrotic corneal process are very different from those of the form of keratitis considered in this paper, yet there is some slight resemblance between them, and, the affection of the trigeminus being closely connected with the corneal degeneration in the former cases, I am inclined to think that there is a closer connection between the same nerve and that form of corneal disease which opposes the local effect of atropine. Ophthalmologists observe every day cases of keratitis and kerato-iritis, in which the opacity and thickening of the cornea are very marked, and yet the pupil dilates readily under atropine, showing that the osmotic power of the cornea still exists. Even in old cases of corneal leucoma, where all signs of vascularity have long since disappeared, the pupil dilates easily and rapidly when atropine is instilled. Hence, in the class of cases under consideration, I am inclined to think that the sympathetic twigs to the iris play an important part in hindering the dilatation of the pupil by atropine, and that, though the atropine does pass through the cornea into the anterior chamber, or into the general circulation by means of the conjunctival and corneal vessels, yet once there, it fails in its specific action on the pupil, owing to some abnormal condition of the sympathetic nerve. What this condition is, whether an inflammation or an irritation, and where localized, whether in the iris or farther back, I am unable to say. It is also possible that the suspected diseased condition of the sympathetic exerts some influence upon the blood-vessels, thus retarding or even hindering the absorption of the atropia. It is very much to be hoped that some elucidation of this question may soon be furnished us, and, if this paper may be the means of calling the attention of my fellow-laborers in the field of ophthalmology more closely to the subject, I shall be more than satisfied.

Art. III.—*Gastrotomy in Stricture of the Œsophagus.* By A. Jacobi, M. D., Clinical Professor in the College of Physicians and Surgeons, New York. [Concluded from page 158, August number.]

John Lowe[1] operated on a woman, fifty-one years old. September 24, 1869. First symptoms observed two years before operation. A scirrhous tumor about cricoid cartilage and base of neck for nine months; no solid food for seven months. Chloroform dispensed with after trial. The incision was conical, one and a half inch long, two fingers' breadth to the inner side of the costal cartilage. Four silver sutures to reach the stomach, avoiding the peritonæum. Silver tube one and a half inch long introduced at once. After considerable relief, patient died suddenly on the third day. Wound looked healthy, integuments and stomach were united.

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[1] *Lancet*, July 22, 1871.

No other inflammation. Serum ℥iv in pericardium; heart fatty, soft; in the aorta a large, firm, colorless clot; the right auricle full of liquid blood. Death appears produced, therefore, not as Mr. Lowe thinks, "by the clot in aorta as the only assignable cause, due to prolonged fasting changing the blood, and shock of the operation," but to paralysis of the heart, between systole and diastole.

Bryant[1] operated on a man with œsophageal stricture. He made an oblique incision along the lower border of the ribs, commencing at the linea semilunaris, with the view of catching the cardiac end of the stomach. He picked up the stomach with his fingers very readily. The patient lived five days; the operation had nothing to do with the death, and the local repair was most complete.

The fifteen cases reported or quoted by me are all of them cases of gastrotomy undertaken for the relief of stricture of the œsophagus. It being taken for granted that all the reasons for an operative proceeding are found correct, is not œsophagotomy an operation to be preferred to gastrotomy? When the stricture is at the very upper end of the œsophagus, not extending below the cricoid cartilage, the œsophagus might be opened, and the danger of peritonitis and the difficulties of after-treatment in gastrotomy avoided. Now, statistics prove but little, where the numbers are small and the individual cases vary so much. Since the time of John Watson, who performed œsophagotomy in 1843, on a man twenty-four years old, for stricture of the œsophagus, with the result of keeping the patient alive for three months, the operation has been repeated a few times. De la Vacherie operated on a man, sixty-eight years old, in 1846. Death after five days. Von Bruns, on a man thirty-eight years old, for struma, in 1859. Death after ten days, from erosion of veins and pyæmia. On another man thirty-seven years old, in 1865; death after five weeks. Willet, on a woman, for carcinoma, in 1868; death after eighteen days. Billroth, on a man with carcinoma of œsophagus, and perforation of trachea; death after one day. Besides these six cases, I find three others quoted from Terier ("de l'Œsophagotomie Externe," Paris, 1870), one of which I have quoted above. They are said to have taken a much more favorable turn. One of the cases attended by Taranget is said to have lived sixteen months, one three months, after the operation. There is a very general objection to œsophagotomy, viz., the difficulty of its performance. Where the access from pharynx is very easy; where a Vacca instrument, or another "Ektropœsophage" can be introduced to guide the operator; where the general condition of the patient is good (as in the uncomplicated presence of a foreign body, for instance), the operation is a difficult one to perform, but may not offer insurmountable obstacles. But in cases of stricture we have to deal from above with a more or less accessible œsophagus, thus lacking guidance from within, and in the very neighborhood of a pseudoplasm. The position of the œsophagus, between the vertebral column and larynx, muscles, vessels, etc., is confined in a narrow space, and changeable to but a small degree. As it has to be fastened to the integuments, a great deal of straining would be required. The neighborhood of the pseudoplasm, its intimate connection with the surrounding parts, will encumber the whole mass and render it less movable. The tissue of the œsophagus, where the incision will have to be made, may participate already in the process, or soon be implicated. For neoplasms will rest only when not irritated. Besides, the patient is feeble, emaciated, perhaps nearly dying, and unfit to undergo an operation of such severity as œsophagotomy.

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[1] "Practice of Surgery," p. 293.

On the other hand, wounds of the stomach are known to heal kindly. The celebrated cases reported in every text-book on physiology, and the thousand experiments since Blondlot's, on animals living with gastric fistulæ, are fair illustrations. One thing is certain, that human beings have lived many years with gastric fistulæ; which has not been proved yet in a case of œsophageal fistula. Peritonitis must be feared, but neither in my case, nor in others I have compared with mine, was it a dangerous feature. In many the direct statement is made that no peritonitis, or but little, was found; on the contrary, there is but a single case in which purulent peritonitis is asserted to be the cause of death; there is another with pyæmia, another with fatty heart and paralysis, one with extensive pneumonia, and a number in which the late hour at which the operation was performed and subsequent exhaustion were the direct cause of death.

The experience of our ovariotomists goes also to show that the dangers of traumatic peritonitis have certainly not been underrated. Thus gastrotomy, being an operation which does not implicate large blood-vessels, and does not require an unusual degree of operative dexterity, is surely preferable. It is true that the results of the fifteen operations hitherto performed do not look encouraging. But they were, almost all of them, made in persons on the point of death, and with unripened experience. When you look over the number of cases here quoted, you find several points, in both operations and after-treatment, which our advanced knowledge upon abdominal wounds would hardly approve of. Thus, the first operator punctured the stomach, but did not fasten it by sutures; in his second case he did the latter, but did not puncture. When the sutures tore out in a violent coughing-spell, he fastened the stomach to the abdominal wall by means of pincers. Another, as late as 1866 (Von Thaden), employed sutures, and a puncture which was too small. Some made it a point to open the stomach near the fundus, the curvatura major, just the very portion which, in case of recovery, would be expected to attend to the greater part of gastric digestion. Some, like Durham, insist upon incising near the cardia. The aperture near the cardiac end must necessarily, after attachment at the abdominal wall is complete, give rise to straining and pulling. It is only in cases like that of Maury, who intentionally opened the stomach near the pylorus, that "tension and straining" are avoided. Besides, it is not always easy, it appears, to avoid an improper locality. Curling commenced his operation at the seventh rib in one case, anteriorly, and came out nearer the cardia than was desirable.

Other differences of proceeding appear in the after-treatment. When is adhesion to be expected? When are the sutures to be removed? Adhesive inflammation will not always set in at the same time in different individuals. The treatment itself may retard it; application of ice certainly will.

Sidney Jones found adhesion in thirty-six hours in one case. In another he allowed the sutures to remain eight days, and met with suppuration in the stitches in consequence.

The mode of opening of integuments may not appear important enough to be here mentioned. Still it is not an indifferent matter whether, if the pyloric portion is to be opened —as it ought to be—the linea semicircularis is selected for the first incision (Durham, Forster in one case), or the rectus muscle a little farther to the left. Nor is it absolutely indifferent whether a longitudinal, or conical (Sedillot), or curvilinear (Maury) incision is made. Cutting through the axis of the muscle ought to be positively avoided.

Nor does it appear that the methods of the after-treatment, as far as feeding is concerned, have all been satisfactory. My case permitted of enlisting the services of the rectum to an unusual extent. Many operators have not even tried to render it serviceable. Maury states that feeding through the rectum proved insufficient in his case. It is an unfortunate fact that the strength of all the patients is so reduced as to weaken the sphincters. Only when operations shall in future be made in due time, before complete exhaustion has set in, will the feeding for five or six days through the rectum be feasible and effective. Only by sufficiency of the sphincters is it possible to explain the fact that Barlow could keep a patient on rectal injections exclusively for seventy days.

Instead of waiting a reasonable time before introducing food into the opened stomach, many operators have done so when the stitches had scarcely been applied. Forster fed every hour; in one case the sutures tore out. Some have fed through a funnel, some injected through a catheter (like Curling, who mentions pain as a constant result of every injection). Some allow the funnel to remain, another introduces it each time. I need not say that I prefer to rely on the rectum for some days, until I have reason to believe in adhesion of the two adjoining peritoneal surfaces being established. I should no more think, if I could help it, of exciting peristaltic motion in the stomach subjected to recent gastrotomy, than of administering a drastic in a common case of entero-peritonitis. As far as the selection of time for the operation is concerned, we shall not always have to decide that point. But, when the physician has any control over his patient and his case, he ought to operate in time. If Maury's case of malignant (probably syphilitic) stricture of the cardiac end of the œsophagus had been operated upon a few weeks previous to absolute exhaustion, it is not difficult to believe that he would not only not have died a few hours after the operation, but might have been subjected to specific and sufficiently powerful treatment, the hyperplastic swelling have been reduced, the œsophagus reopened, the gastric fistula healed, and the patient be a well man to-day.

In view of all I have said, after I have spoken of its indications, difficulties, and promises, of its advantages over œsophagotomy, I need not again plead for gastrotomy as a justifiable operation. Colotomy has conquered its place in strictures of the lower, gastrotomy will obtain it in those of the upper portions of the digestive tract. It is, moreover, a peculiar feature common to both, that their diseases will run their course, usually, without many complications, or without metastatic processes. Besides, neither rectum nor œsophagus is a vital part. They are conveniences, not necessities; at all events, life can exist without them. Billroth has proposed the entire removal of a diseased portion of the œsophagus if accessible. It is true, many of us would rather lose life than either œsophagus or rectum; but not many of us would rather die violently of hunger and thirst, than of slow and peaceful exhaustion. And patients suffering from œsophageal stricture are narrowed down to choosing between the two necessities.

Gastrotomy will hold a position similar to that of tracheotomy in point of dignity, but not in frequency of performance. The larynx is not a vital organ. It may be circumvented, as in croup or laryngeal pseudoplasm, by opening the trachea, or it may be removed altogether, as has been done by Billroth. It is not many years since we disclaimed the justifiability or necessity of tracheotomy in croup; to-day I know that very many of my youngest *confrères* not only defend tracheotomy as a necessary operation, but have even pronounced, long since, that every physician ought to know how to perform it *propriis manibus*.

ART. IV.—*Rare Form of Rhythmical Irregularity in the Action of the Heart.*[1] By JAMES J. PUTNAM, M. D., Boston, Mass.

THE accompanying sphygmographic tracings were taken from a man recently a patient at the Massachusetts General Hospital, under the care of Dr. Shattuck, by whose permission the case is published, the facts from which the following sketch was made being taken mainly from the hospital records.

The patient, P. M., presented himself at the hospital for admission, on November 29, 1873, complaining of weakness and stiffness of the legs, so well marked that, even when aided by a cane, he hobbled with difficulty across the floor, having the gait of a rheumatic ; also of a dull, grinding pain, referred to the muscles at the back of the left thigh, and to the neighborhood of the hip-joints, especially the left.

He gave the following history :

Had been a house-painter for twenty years, but had remained in good health until May, 1873, except for occasional attacks of retention of urine, accompanied with severe pain (he had several of these attacks while in the hospital, where they were believed to be due to chronic prostitis, found on examination by Dr. S. Cabot). His habits had been in all respects temperate.

He had not suffered from colic, except to slight extent, at intervals of a year or so, nor from constipation.

In May, 1873, he began to suffer from want of control over the legs, felt especially in going up and down stairs, and when walking in the dark.

All the muscles of the body, but especially those of the legs, used to tremble violently, especially after he had been sitting still for a time and then tried to rise, and occasionally used to twitch at night, the left more than the right.

Toward the end of July he was attacked suddenly with severe pain in the left thigh, following pretty nearly the course of the great sciatic nerve, and was laid up by it for several weeks. At about this time he began to notice that the action of his heart was very irregular. He used also to feel his pulse

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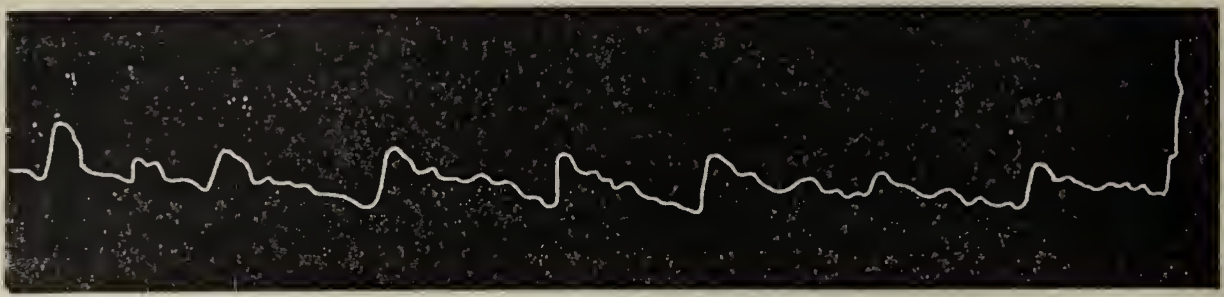
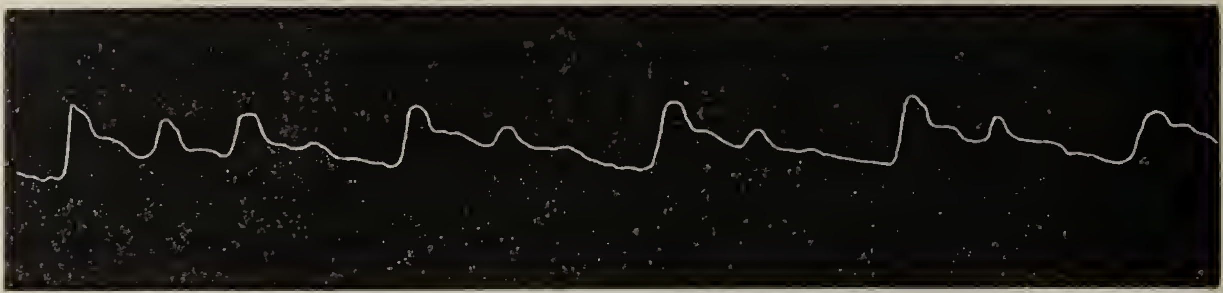
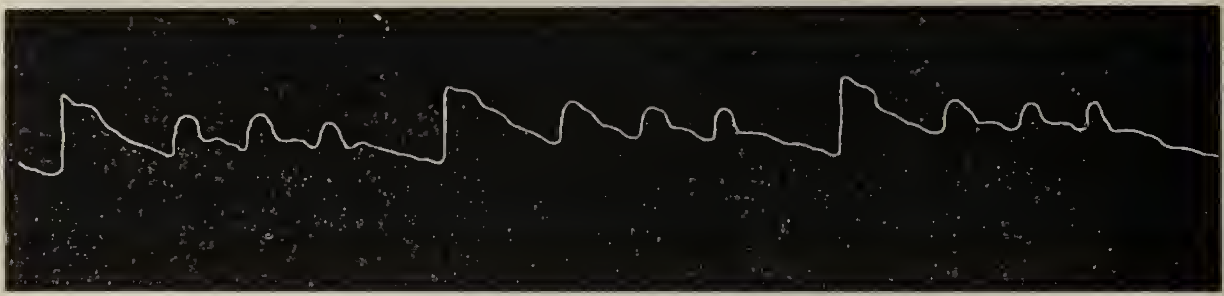
[1] Read before the Boston Society of Medical Sciences.



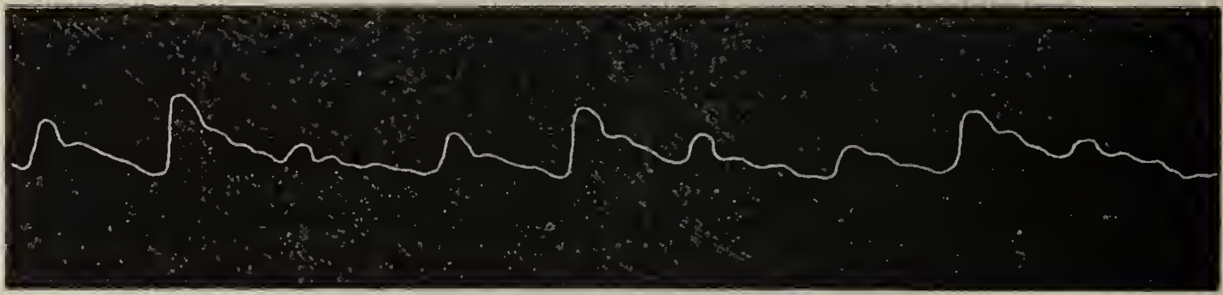
No. 1.—Pulsus Alternans.



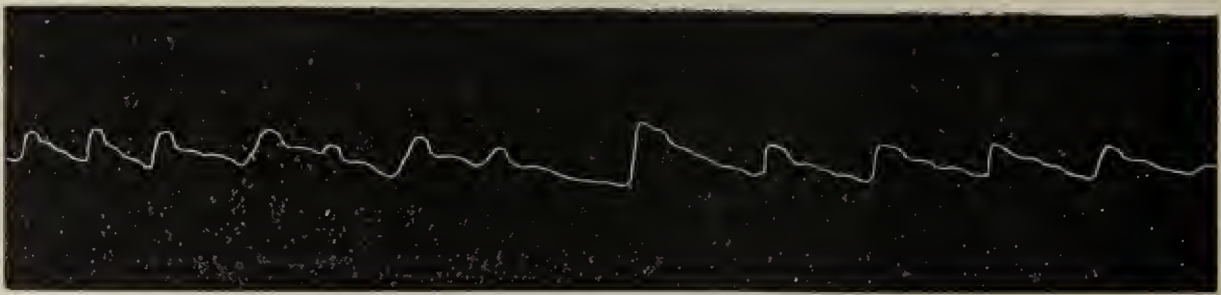
No. 2.—Pulsus Bigeminus. Pulse 110.



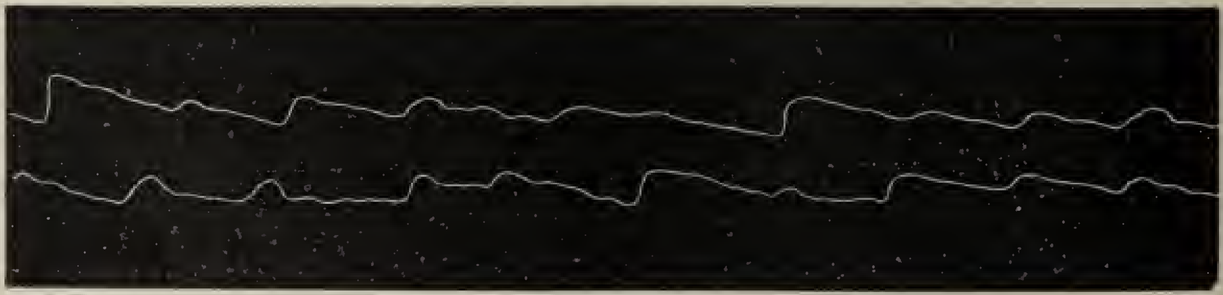
No. 3, *a*.—Pulsus Trigeminus. Pulse 90.



No. 3, *b*.—Pulsus Trigeminus. Pulse 90.



No. 4, *a*.—Pulse 87.



No. 4, *b*.

from time to time, and states that it was occasionally so feeble as not to be perceptible. Through the summer he was in all respects better, but in the autumn he fell back again.

At his entrance into the hospital (November 29, 1873), it was found that there was no muscular atrophy, nor material modification of the sensibility of the skin, of any part of the body. He could keep his balance perfectly well with his eyes closed, though it required an extra effort. The area of cardiac dullness was of normal extent, and there was no murmur. Two heart-sounds were heard as usual with each beat, the small as well as the large. The arterial tension at the wrist was usually decidedly high.

There was no difficulty in swallowing, in mastication, or in articulation, nor any impairment of the intellect.

The urine contained no albumen, but a good deal of pus and epithelium. It was not examined for lead immediately, but, a short time later (when the patient was taking iodide of potassium), lead was found to be present in small amount.

On December 1st he was ordered iod. pot. gr. v, 3 t. d., which was omitted December 20th, and again given, this time in doses of gr. x, 3 t. d., from January 1st to January 10th. Other than this, and an occasional cathartic or opiate, he took no medicine while in the hospital. From January 1st to January 5th, when he was discharged, his spinal cord was galvanized daily.

He improved constantly while in the hospital, and at his discharge could walk much better without his cane than previously with it. The tracings were taken on the 15th, 28th, and 31st of January, and the 1st and 4th of February.

Prof. Traube, of Berlin, has described two varieties of rhythmically irregular pulses[1] analogous to this, which he has called the *pulsus bigeminus* and the *pulsus alternans*.[2] In the first variety, each two pulsations is followed by a relatively long period of rest; in the second, alternately strong and weak pulsations follow each other in regular succession, somewhat as in tracing No. 1 in this case.

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[1] "Beiträge zur Pathologie und Physiologie," Bd. I., pp. 373, 448, and others.

[2] *Berliner Klin. Wochenschr.*, 1872, Art. "Pulsus Bigeminus." Compare also the accompanying tracing.

The first variety had been observed by him a few times in the case of persons dying of acute disease, a short time before death, being followed by the slow pulse (*pulsus tardus*) that ushered in the death of the left ventricle, but more frequently in the case of animals on which he was experimenting, and always under certain conditions: viz., when the inhibitory nervous centres of the heart were strongly stimulated by some agent circulating with the blood, and when at the same time the influence of the centres situated in the medulla oblongata was removed by section of the vagi, or had become weakened in consequence of over-stimulation, and the centres situated within the heart itself alone left active. For example, it was observed when a curarized animal, kept alive by artificial respiration, was injected by digitalis, and then the vagi cut; or was partially suffocated by stopping the artificial respiration until sufficient carbonic acid had collected to poison the spinal inhibitory centres, which give way before the proper cardiac centres.

Other heart-poisons, such as nitrate of potash, or cyanide of potassium, acted similarly to digitalis and carbonic acid.

Prof. H. P. Bowditch, of Harvard Medical College, had observed the phenomenon occasionally both with dogs and rabbits, subjected to various experiments, and it was interesting to find that the best instances occurring among a number of old tracings which he was kind enough to examine for me, were in cases where the animal, kept alive by artificial respiration, was allowed to partially suffocate, just as in Traube's cases. In the best-marked instance the pulsus bigeminus was followed very soon by the pulsus tardus of impending death, which was, however, avoided by the renewal of the respiration.

The pulsus alternans was observed by Traube in the case of a patient suffering from valvular disease of the heart, toward the close of the disease, and while the patient was taking digitalis in moderately large doses.

Traube believed that the same general conditions underlie this variety of rhythmical irregularity of the pulse as were observed in the case of the pulsus bigeminus. The stimulation of the cardiac inhibitory centres was supposed to be effected by the digitalis, while the depressing effect of the disease itself, to which the patient shortly after succumbed, was believed to cause a partial paralysis of the spinal inhibitory centres, as was shown also by the fact that even large doses of digitalis could not bring down the number of beats below 108 per minute.

With the increasing feebleness of the patient, the pulsus alternans grew less marked, and finally disappeared altogether.

The tracings taken from the present patient are examples of what might be called pulsus alternans, bigeminus (though not answering exactly to Traube's definition), and trigeminus. They tell their own story, and only a few words more are necessary in explanation of them, and to sum up the case..

The character of the pulse, although changing as it did from day to day, did not ordinarily vary much during the time of the single observations. Only on the 4th of February, when the patient felt very poorly and had a weak and slow pulse, without the usual characteristics, the tracings differ a good deal among themselves. The peculiar irregularities of the pulse were not, however, always most marked when the patient felt the worst.

As the record shows, the system was not under the influence of iodide of potassium when any one of the tracings was taken.

It will be seen that the stronger beats are generally followed and preceded by somewhat longer rests than the shorter ones, as was also the case with Traube's patient with the pulsus alternans.

Especially on looking at the tracing No. 3, *a*, where the force of the beats grows gradually less, and then gradually greater, the mind reverts to the rhythmical irregularity of the respiration known as the Cheyne-Stokes respiration, for which to be sure Traube himself has given an apparently sufficient explanation, which seems entirely inapplicable here.

It may be added that the rhythm of the respiration in this case stood in no fixed relation to that of the pulse.

The occupation of our patient, and especially the presence of lead in his urine, leads us to suspect chronic lead-poisoning as the cause of at least part of his symptoms—the indefinite, deep-seated pains in the posterior fleshy parts of the thighs, and in or about the hip-joints, especially the left, of a dull character, and not shifting their place rapidly like rheumatic pains—the muscular tremors, the general feebleness of the whole system, and the slight want of control over the legs.

As to the peculiar irregularity in the heart's action, it is difficult to explain it in the manner adopted by Traube, although, when we come to know more of the action of lead upon the system, we may be able to do so.

It is also highly probable that the inhibitory centres for the heart are frequently affected in chronic lead-poisoning. Many observers, but especially Tanquerel, have found the pulse somewhat slow throughout the disease, but particularly during the attacks of colic, when the number of beats often falls to 30 or 40.

On the other hand, instead of being slow, it is sometimes more rapid than normal, 80–100.

In this case the pulse was generally quick, 80–100, full and strong.

On April 2d, however, it was rather slow, 70–75, very feeble and irregular, and changing its character from minute to minute, and it was noticeable that on that day the usual irregularity was scarcely to be detected (*vide* tracings No. 4, *a* and *b*).

I have not been able as yet to find a case of lead-poisoning that presented exactly the rhythmical irregularity of the pulse observed here. Tanquerel, however, whose experience embraced 1,200 cases and more, observed very frequently irregularities, of one sort or another, during the attacks of colic (which may last for days and weeks).

He says:[1] . . . "For some moments the pulsations succeed each other with an astonishing rapidity, then suddenly they sensibly diminish, and so on. . . . Generally when the pulse is irregular, it is not hard, it often beats from 60–80 times in a minute, it is rarely slow."

Whether the irregularity of the pulse in the case of this patient can be brought into a parallel, *etiologically*, with those of Traube or not, it is certain that it does not have the same *prognostic* meaning.

It has existed for nearly a year, during which time the patient has alternately gained and lost ground, and did not diminish at the time of his marked improvement in the hospital.

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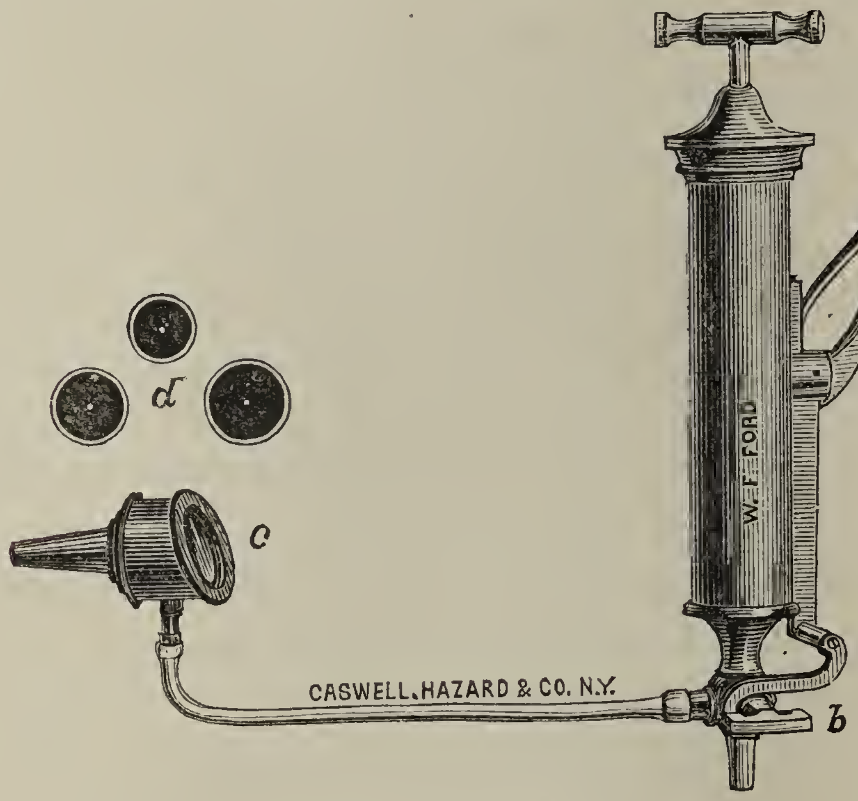
[1] Translation by S. L. Dana, 1848, p. 94.

ART. V.—*A New Application of an Instrument for the Relief of Deafness caused by Adhesions of the Ossicula of the Tympanum.* By HOWARD PINKNEY, M. D., Aural Surgeon to the New York Eye and Ear Infirmary.

DURING several years devoted more or less to the study of aural diseases, I have met with a class of cases, the treatment of which, until recently, has been most unsatisfactory. These cases are those that present, upon inspection, but slight alterations in the membrana tympani, with the Eustachian tubes open, and where sound is readily communicated by contact of the watch or tuning-fork, but where there is very decided deafness. This class of cases is referred to by Politzer in his work on the membrana tympani in the following words: "At the beginning of this work we remarked that, in a considerable number of cases of deafness, no abnormal changes are perceptible upon the membrana tympani. If, however, we find the Eustachian tube quite pervious, and little or no improvement in the hearing after the employment of the air-douche, it is difficult, often impossible, to determine whether the affection is of the tympanic cavity or of the labyrinth. The cases have hitherto all been classed together as nervous deafness (Kramer); but since pathological anatomy has been recognized and cultivated as the groundwork of all accurate knowledge in otology, as well as in other branches of medicine, we have been led to the conclusion that, in a great number of these cases, the seat of the trouble is in the cavity of the tympanum. The dissections of Toynbee and Von Troltsch sufficiently prove this; and I am of the opinion, from my own dissections, that circumscribed affections quite certainly do occur in the middle ear, which lead at one time to adhesions between the malleus, incus, and upper wall of the tympanum, at another to the union of the stapes with the edge of the fenestra ovalis, without the membrana tympani or the Eustachian tube being in any way sympathetically affected. We must frankly confess that the diagnosis in these cases still rests on uncertain grounds; and it will be the task of physiological and pathological investigation to establish a method of discriminating the cases of impairment of function which are caused by obstacles to the transmission of sound in the cavity of the tympanum, from those caused by primary affections of the terminal branches of the auditory nerve in the labyrinth."

The cases of deafness in which the use of the instrument I am about to describe has been most useful, I believe to have been due to adhesions of the ossicula, as already described by Politzer, from the fact that sound was readily communicated by contact. To relieve this condition I have tried various means, but did not meet with any success until January, 1873, when I constructed the simple instrument figured in the accompanying engraving, which consists of merely combining two other instruments, viz., Siegle's Pneumatic Speculum and



a double-valve stomach-pump; by this instrument the drum can be drawn forward or rather outward at pleasure, and passive motion of the ossicula be accomplished. The instrument is used in the following manner: The patient is placed between the light and the physician, in the usual mode now adopted in the examinations of the ear. The pneumatic speculum (which is connected to the pump by means of a piece of rubber two or three feet in length) is introduced into the meatus until a good view of the drum is obtained, and adapted so closely as to make it air-tight. For the purpose of fitting different-sized canals, the speculum has three tubes (*d*) of different sizes, which can be attached at pleasure. The speculum now being in position, the pump is placed in the hands of a careful assistant, who gently or rapidly withdraws or depresses the piston as directed by the physician, who carefully watches its effect upon the drum through the glass covering of the speculum. The valve of the pump connected with the rubber tube should always be open when the piston is withdrawn, or while suction is being made, and closed when it is depressed, thereby opening the other valve and preventing the air being forced back against the drum. I have used this instrument, with varied success, in a large number of cases, both at the New York Eye and Ear Infirmary and at my private office. Some cases received but little benefit, while in others the improvement has been very marked. The following cases I think fully illustrate its efficacy. The first case in which I used this instrument, which, for want of a better name, I call the drum-elevator, was that of a lady, Mrs. ——, aged twenty-seven years, who had been under my care for upward of a year for chronic catarrhal inflammation of the middle ear, right side, posterior nares, and throat. The drum was sunken and opaque, the Eustachian tube partially open, and the greatest hearing distance obtained at any time was four inches with my watch (hunting-case) open. The normal hearing distance for my watch, closed, is about twenty inches. On January 14th, I applied the elevator for the first time, when, after several careful exhaustions of the pump, she could hear my open watch five inches. Other applications were made as follows:

15*th.*—Elevator applied: hearing distance, seven inches, open watch.

16*th.*—Elevator applied: hearing distance, ten inches, open watch.

22*d.*—Elevator applied: hearing distance, twelve inches, open watch.

23*d.*—Elevator applied: hearing distance, thirteen inches, open watch.

The patient then left the city, and was gone several months, and, on her return, the hearing distance was only three inches, open watch. The Eustachian tube was obstructed, and the catarrh of the nose and throat much aggravated; a reapplication of the elevator produced little or no benefit. The inflammation had extended itself to the opposite ear. Since her return, she has been under the treatment of several of our most experienced aural and catarrhal surgeons, but her hearing distance remains about the same. Although this case apparently improved under the use of the elevator at one time, it is not one where I should expect permanent success from its use, as inflammation was still going on.

Case II.—Mr. G. applied to me on the 16th of May, 1873, complaining of deafness on the right side, which he only noticed about ten months previously. He could faintly hear my watch (closed) tick at one inch from his right ear; left ear the hearing distance was normal. The right drum was translucent, and but slightly sunken, and the Eustachian tube was open. Failing to improve the hearing after repeated efforts with Politzer's air-douche and the Eustachian catheter, I applied the elevator on May 19, 1873, when the hearing distance was increased to ten inches; the second time, on May 22d, when it was increased to eighteen inches. I again applied it on May 30th, after which application he could hear as well on the right side as on the left. It is now nearly one year since the last application, and his hearing, to use his own words, "is as good as ever."

Case III.—Mrs. G., aged thirty years, applied at the New York Eye and Ear Infirmary in the latter part of March of this year (1874), presenting the following history: Has heard no sound on the left side for ten or fifteen years, and has been deaf on the right side for a considerable time; she is so deaf that she is obliged to bring a friend with her to explain her case. Cannot hear my watch when closely pressed against the left ear, and can only hear it faintly when pressed against the right. The right drum is almost normal in appearance, being only slightly sunken. The left drum is sunken and opaque; both Eustachian tubes are freely open. Politzer's and Valsalva's methods for inflating the middle ear were thoroughly tried for one week, without any apparent improvement. The elevator was then applied to the left or worse ear, and, after four or five exhaustions of the pump, she could hear my closed watch one-half an inch. It was then applied to the right side, and the hearing distance was increased to five inches. The same application has been repeated about twice a week to the present time (June 17th), ten weeks from the first application, and she now distinctly hears my watch (closed) twenty inches on the right side, and ten inches on the left, and hears all ordinary conversation.

I would merely add here, that I have frequently used this instrument for the removal of purulent accumulations of the cavity of the tympanum, where there is perforation of the drum. Its use for this purpose is somewhat objectionable, as the moisture rapidly covers the glass of the speculum, and interferes with a view of the parts.

Art. VI.—*The Scientific Value of the Results of the Post-mortem Examination in the Case of William McCormick, dead of Hydrophobia.* By William A. Hammond, M. D.

The jury impaneled by Coroner Kessler, to inquire into the cause of McCormick's death, was chiefly constituted at the time the *post-mortem* examination was begun, and embraced the majority of the medical gentlemen then present. I was not included in the jury, because, as the coroner said, he desired me to make the microscopical examination of the nervous structures.

I do not wish it to be understood that, in making this histological research, I was influenced in the slightest degree by the coroner's request, for I went to the *post-mortem* examination at the invitation of the attending physician, Dr. Alexander Hadden, was requested by him to make the autopsy, and was prepared to obtain such portions of the brain and spinal cord as I might require, not knowing that the coroner was to interfere in the case. I should, therefore, have made the investigation in the interest of science, and without reference to the coroner in any particular. All I mean to imply is, that my removal of the specimens, and the declaration of my intention to subject them to careful examination, were with his full knowledge and approval. Doubtless he could have prevented me had he been so disposed; that he did not, entitles him to my thanks. I had also visited the patient professionally during the course of his disease.

The jury was composed of Drs. Frank H. Hamilton, T. M. B. Cross, P. W. Cremin, D. F. Leavitt, A. Jacobi, W. W. Strew, W. Schoonover, A. McL. Hamilton, C. P. Russel, and M. Clymer.

I was subpœnaed before this jury, and in my examination gave my evidence with becoming respect and decorum, and without putting forward any extravagant claim relative to the importance of the results I had obtained. I was very far from asserting that, in the actual state of our knowledge, they could be regarded as essential or constant conditions. Neither did I make any pretensions to priority. On the contrary, in a letter to the *Tribune*, and in my remarks to the New York Neurological Society, as well as before the coroner's jury, I disclaimed any thing of the kind.

But I did claim, and do now, that the lesions existed in conjunction with a group of symptoms designated hydrophobia, that they were an important link in aiding us to arrive at a full knowledge of the pathology of the disease, and that their value was increased by the fact that they were to a great extent identical with similar results obtained by Dr. Clifford Allbutt in two cases of the same affection.

Reference to the illustrations in the frontispiece, and to the descriptions, will give a very correct idea of the nature of the changes discovered.

It is scarcely necessary to state that no one in this country can claim priority over me in detecting the existence of the lesions in question as associated with hydrophobia. I have been unable to find a single recorded case in which a microscopical examination of the brain and spinal cord has been made on this continent in the case of a person dead of hydrophobia. In Europe such examinations have been exceedingly few, and, with the exception of the two cases reported by Dr. Allbutt, have led to negative results. I do not except from this statement the case reported by Meynert, for, although deviations from the normal structure were found, they were not of such a character as to be in any direct relation with the symptoms.

Now, the jury found, without a dissenting voice, that McCormick came to his death by hydrophobia. Here their functions ceased. They were sworn to inquire into the cause of his decease, and, having performed that office, it was their duty to have acted in accordance with Prof. Frank H. Hamilton's suggestion, and have adjourned *sine die.* The coroner, however, in excess of his powers, directed them to consider certain points in the natural history of the disease, and to make some suggestions of a practical character to the public.

He furthermore (still in excess of his powers) put to them the direct question, "Whether the *post-mortem* investigations in this case are of any value in determining the pathogeny of the disease?" This question was answered in the negative, Drs. Frank H. Hamilton, T. M. B. Cross, P. W. Cremin, and D. F. Leavitt, dissenting.

No reasons are given by the majority for this remarkable action—an action, I venture to say, unprecedented in the history of that most erratic of all legal institutions, the coroner's jury. No reasons are given for the conclusion that the *post-mortem* investigations are of no scientific value; but from members of the jury I learn that two objections were brought forward:

1. That the results were of no importance.
2. That the microscopical examination being improperly made, the appearances were probably produced by the reagents to the action of which the tissues were subjected.

These objections I propose to answer, and then I shall have something to say relative to the *animus* which influenced some members of the majority, and of their competence to pass judgment in any matter requiring an acquaintance with the minute anatomy of the structures involved, or the microscopical manipulation requisite in studying histology.

1. The symptoms of hydrophobia are of such a character as to show that the cortical substance of the brain, the medulla oblongata, and the spinal cord, are in some way or other disordered. The mental symptoms indicate the implication of the peripheral gray matter of the brain; the spasms in the throat, the alterations in the character of the voice, the irregular respiration, and the disturbance in the action of the

heart, show that the medulla oblongata is involved, and the convulsive movements in the muscles of the neck and chest point to trouble in the upper part of the spinal cord.

Dr. Clifford Allbutt, as I have said, found by microscopical examination that in two cases of hydrophobia the cortical substance of the brain was in a state of granular degeneration. Now, granular degeneration is often the first step in fatty degeneration, and in McCormick's case the cortical substance of the brain was found by me to be in this last-named state. Is this a fact of no scientific value, when it is well known that during the course of his disease the patient was highly delirious? Will the gentlemen of the majority pretend to tell us that there is no relation between delirium and structural changes in the cortical substance of the brain?

Examining the medulla oblongata, I discovered numerous extravasations of blood, to which, however, I attached only a secondary importance; but when in addition I found the nuclei of the pneumogastric, the hypoglossal, and the spinal accessory nerves, in a condition similar to that existing in the cortical substance of the brain, I considered the matter of great moment. In Dr. Allbutt's cases these parts of the medulla were the ones ascertained to be involved. Is it of no scientific value in a case in which there are spasms of the larynx and pharynx and of the respiratory muscles, and irregularity of the heart, to find the points of origin of the nerves which go to the parts in question in a state of structural disorganization? Is it of any scientific value to find, in cases of glosso-labio-laryngeal paralysis, disease in the floor of the fourth ventricle involving the nuclei of the nerves distributed to the paralyzed parts? And will those jurymen of the majority, who know any thing of the pathological physiology of the two diseases, allege that a structural change is of any less importance in the one than in the other?

As regards the spinal cord, the upper part alone of which was examined, I ascertained the existence of granular and fatty degeneration of the gray substance and of the nerve-roots, together with nuclear proliferation of the neuroglia-cells of the white substance. Dr. Allbutt discovered like conditions in those parts; and I assert that in a case in which there is spasm of the muscles of the neck and chest, and disturbance of the function of the spinal accessary nerve, as there were in McCormick's case, it *is* a matter of scientific value to find the centre from which the nerves come in a state of profound disease.

If the majority had declared that in the present state of our knowledge it could not be determined to what extent or in what manner the symptoms were dependent on the lesions, there might have been some excuse for their action. It is not to be supposed that physicians who are not histologists or microscopists can give a very decided answer to such a question as was submitted to them by the coroner. But they assumed to answer it, and they answered it in a way which certainly cannot redound to their credit.

Why, even if I had found the brain, the medulla oblongata, and the spinal cord, in a state of perfect integrity, the result would have been of some scientific value in determining the pathogeny of the disease.

3. Was the microscopical examination improperly made, or were the appearances I have described produced by the reagents employed? Of course, if this latter was the case, then the results were not due to a morbid process going on during life, and all that I have said in regard to their value falls to the ground.

It was very apparent to me, during the course of my examination before the jury, that one of them at least (Dr. Jacobi) had somehow or other imbibed the notion that the changes were the consequence of the action of the alcohol which I had used as the hardening agent. The absurdity of this idea will be apparent when I state that my process was almost identical with that employed by Lockhart Clarke in his studies of the constitution of the nerve-centres, that it is one sanctioned by Frey, and that I have employed it for many years in the examination of diseased nerve-tissues. The chromic-acid process is certainly preferable in the examination of normal nervous structures, but it takes a long time, and it is liable to cause disintegration of tissues already altered by morbid process. For such structures alcohol and a low temperature are preferable, and they have the additional advantage of allowing examinations to be satisfactorily made in a few hours instead of after several weeks, and the sooner they are made the better.

I defy any juryman of the majority to produce, by any degree of maceration in alcohol, such changes in the brain, medulla oblongata, or spinal cord, as I have detected. The slightest acquaintance with microscopical manipulation on their part would convince them that such a result would be impossible.

But my researches were not restricted to the examination of specimens hardened with alcohol. The chromic-acid process was also employed; the sections are still in my possession; several of them are mounted in Canada balsam, and have been studied by numbers of my friends. They will also be exhibited at the next meeting of the New York Neurological Society, and any one who wishes can then inspect them.

Some of these sections show the fine granular degeneration of Allbutt, in conjunction with the decided fatty degeneration I have described, a fact which leads me irresistibly to the conclusion that they are stages of one morbid process.

In the remarks relative to the majority of the coroner's jury which I have made and am about to make, I desire to except Drs. Clymer and Allan McLane Hamilton, both of whom have disclaimed, in manly notes addressed to me, any desire to detract from the value and reality of the results obtained. Dr. Clymer informs me in his note, that he drew up the resolution himself, and limited the expression of opinion entirely to the value of the results in elucidating the pathogeny *or mode of origin of the disease.* That he is sincere in his declarations I am very sure, but I am also equally certain that several of his colleagues did not put so restricted a meaning on the word "pathogeny." I am myself of the opinion that it is fairly applicable not only to the genetic process by which the disease is started, but also to the etiology of the symptoms. That it is liable to be misconstrued is very evident from the use made of it in an article published in the *Medical Record* of August 1st.

In undertaking to study the minute anatomy of the nervous structures involved in hydrophobia, I did not venture upon a task for which I was unprepared. I have been a microscopist for more than twenty years, and have labored not altogether without success to advance science in the direction of histology, as many of my friends very well know. I have made special study of the histology of the nervous system.

For any honest difference of opinion I have no other feeling but that of profound respect; but there is a hostile and a friendly way of differing, and several members of the majority, notably Drs. Jacobi and Russel, have chosen the first named. They have, I believe, shown a degree of animosity for which I am entirely unable to account. It is true, Dr. Russel had, a few weeks previously, read a paper on hydrophobia before the County Medical Society, a full abstract of which appeared the next morning in one of the daily papers, but I am not aware that he has a monopoly of the subject; it is true, Dr. Jacobi might with truth allege that I am not a German, but I have the most sincere appreciation of the acquirements of our Teutonic brethren, and surely the mere fact of an inquirer having the misfortune to be born an American should not suffice to deprive his investigations of all scientific value. That these gentlemen, and those who acted with them, have any such qualifications as would render them competent to sit in judgment on one of their colleagues in a matter involving a knowledge of the anatomy and histology of the nervous system, I have yet to learn. For all I know, they may be the masters of us all on these subjects, but, if they are, they have not hitherto chosen to make the fact manifest to the rest of us.

I therefore deny their right to bring into an official act, like the verdict of a coroner's jury, an opinion relative to the scientific value of investigations undertaken and conducted in good faith by one of their colleagues in the medical profession.

I deny that they have any justification for such action either morally or scientifically. And I question their scientific competency to pass a judgment in matters which they never showed their ability to investigate, and in regard to which they have not even given evidence that they possess any special knowledge.

A word more, relative to the publication of the proceedings of the Neurological Society in the newspapers of the following day, and I shall end what I have to say on the subject.

That the publication of purely medical communications in the newspapers is to be deprecated, no one is more ready to admit than myself. I have never made or sanctioned the making of any such publication in my life. But there is a class of subjects, partly medical, partly sanitary, or partly involving matters of social economy in other directions, which it is customary to publish more or less fully in the public press; indeed, which it is impossible to keep out of the daily newspapers. It is customary for the reporters to be invited to attend the meetings of the societies before which such subjects are considered. In times of great excitement relative to some particular disease the daily journals seek with avidity for information, and I am not aware that the propriety of giving it to them has heretofore been questioned. The cholera, trichinæ, typhus fever, the Siamese twins, etc., have been fully described by physicians in the columns of the daily press, and the reports of scientific investigations have been given in their own language. A prominent physician's lectures on strictly medical subjects were very fully reported in the columns of the *Tribune.* Dr. Dupuy's remarks on the functions of the brain, made before the Society of Neurology and Electrology, were published, in abstract, in the *Times;* the proceedings of the Medical Library and Journal Association, of the County Medical Society, and of the Academy of Medicine, frequently appear the next morning in the city newspapers; and the proceedings of the American Medical Association, with abstracts of the more important papers, are not only published in the local secular journals, but appear more or less fully in newspapers throughout the whole country. If there is any impropriety in this, why has it not been noticed before? Perhaps the woodcuts which the *Tribune* published are the offending cause. The drawings were given after much solicitation from the editor, and why should they not have been? If the line is to be drawn at woodcuts, it ought to have been drawn before, for woodcuts of the anatomical peculiarities of the Siamese twins were printed in the daily press, and several years ago were given of the trichinæ.

If any one is to be attacked for allowing matters of general interest, partly medical in their character, to be published in the daily newspapers, let us begin somewhere near the beginning. My friends Drs. Parker, Dalton, Clymer, Brown-Séquard, J. C. Peters, Lente, Pancoast, Bartholow, Garrish, Sims, Doremus, Hamilton, Sayre, Cross, Wagner, Hadden, A. McL. Hamilton, Beard, and many others, and even Drs. Jacobi and Russel, should be first arraigned.

In regard to the McCormick case, half a dozen reporters were present at the *post-mortem* examination, and the next morning the newspapers contained their reports. How did these gentlemen get there? I did not ask them. The only persons I invited were Drs. Frank Hamilton, Clymer, and Cross. The reporters had certainly been notified by some one, for, though they are proverbially keen after news, they could scarcely have scented out the time and place of the *post mortem* without some intimation.

I am conscious of having done my whole duty in the matter of the *post mortem* of the remains of McCormick, and I am not, therefore, satisfied to have others, who may feel chagrined, attempt to put me in a false position.

Art. VII.—*On the "Novel Disease of the Penis," as described by Drs. Van Buren and Keyes.* By Howard Marsh, M. D., Assistant Surgeon to St. Bartholomew's Hospital, and to the Hospital for Sick Children, London.

The April number of the New York Medical Journal contains a paper by Drs. Van Buren and Keyes on a "Novel Disease of the Penis," which, as they believe, is exceedingly rare, and which consists of a chronic circumscribed inflammation of the erectile tissue of the corpora cavernosa. If a short space can be afforded me, I should like to supplement this interesting paper by referring to three cases of this affection that have come under my own notice, and by a quotation from an address delivered last year at the Clinical Society in London, by Mr. Prescott Hewett, in which he expresses an opinion respecting the cause of the disease—a point which Drs. Van Buren and Keyes have left open for further investigation.

T. L., aged fifty-seven, came to the Casualty Department of St. Bartholomew's Hospital in the summer of 1872.

I found situated about an inch and a half behind the glans a firm, thin, very distinctly defined plate, superficially embedded in the substance of the corpora cavernosa. It measured about half an inch from before backward, and extended across the dorsum of the penis, and overlapped the sides like a saddle. It had been developed very insidiously, in the course of the previous three years, causing neither pain nor tenderness, nor any uneasy sensation. During this time it had continued slowly to increase, and the patient believed it had gradually somewhat shifted its position by traveling rather backward. He did not find it the source of any functional inconvenience. For some years he had suffered occasionally, but not severely, with attacks of rheumatic gout. As I did not see him again, I am unable to say whether the treatment I recommended, consisting of small doses of alkalies, proved beneficial.

The other two cases I have seen were so similar to that which I have just related, and also, in their principal features, to those described by Drs. Van Buren and Keyes, that I need not dwell on them particularly. The patients were both over fifty-five, and the disease had been in progress between two and three years. The anatomical characters of the affection were almost identical with those noticed in the case of T. L., except that the hardness occupied the mid-substance of the corpus cavernosum instead of its superficial portion. The following is from Mr. Prescott Hewett's address,[1] in which, just previously, he had been describing cases of phlebitis and plugging of the veins, depending, as he agreed with Sir James Paget[2] in believing, on constitutional gout.

"And, as closely allied to this blocking of the veins, I will now direct your attention to a class of cases not alluded to, as far as I know, in the best recent works on surgery. I believe that blocking may occur in the corpus cavernosum of the penis in the same way as it does in the veins—that is, spontaneously, in gouty constitutions, and without strain or injury of any kind. I have been led to this belief by two cases, the first of which was in a gentleman sixty-five years of age, whom

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[1] "Clinical Society Transactions," vol. vi., pp. 40, 41, 1873.

[2] "On Gouty and Other Forms of Phlebitis." St. Bartholomew's Hospital Reports, vol. ii., 1866, pp. 82, *et seq.*

I had known for a number of years, during the latter part of which he had in various ways shown a decided tendency to gout, and who consulted me concerning a nodule in the under part of the corpus cavernosum, and about an inch beyond the glans, of the size of a sixpence; this nodule was hard and perfectly circumscribed; it was without pain, and, as there had never been any injury of any kind or sort, it had been accidentally discovered. There were no enlarged glands in the groin. Matters remained in much the same state for a couple of years, when this gentleman met with a severe accident while riding in the country, and of this he ultimately died. The exact nature of this case thus remained doubtful, until the second case fell under my notice. The gentleman, who was fifty-eight years of age, had also shown in various ways a tendency to gout; and in this case, too, the trouble was accidentally discovered, there never having been strain or injury of any kind. In the corpus cavernosum were four nodules, three on the left side and one on the right side. Varying in size from a pea to that of a French bean, they were perfectly circumscribed, hard to the touch, knot-like, and painless when handled. There were no enlarged glands in the groins. The patient had never had phlebitis, and he was in good health, and of his usual weight. I first examined the case two years back, and all that has occurred from that time to this is a marked diminution in the size of the nodules: two of them having disappeared, leaving only a thickening, and the largest being now no bigger than a pea. The groins remain perfectly free, and the gentleman is in his usual health and of his usual weight, and during these two years the case has been left undisturbed by treatment; no medicine of any kind has been taken, nothing was applied locally; the disease was left to its natural course.

"Such were the two cases, and, from the course which they have pursued, I think it may fairly be inferred that they were cases of spontaneous blocking, of a gouty origin, in patches of the corpus cavernosum."

Art. VIII.—*Chemical Examination of Saccharine Urine.*[1]

By George B. Fowler, M. D., Examiner in Physiology, College of Physicians and Surgeons, etc.

I would submit the following results of some recent experiments with Tromer's test for sugar in the urine.

This test possesses advantages over all others, in that it is very simple in its application, easily made, and, more than all, does not deteriorate by keeping. But it has been long complained of that it would not react with the urine:

Add to an ounce of water one drop of honey, apply Tromer's test, and the characteristic reaction will take place.

But substitute urine for the water, and the test applied in the usual way will not reveal the presence of sugar, whether one drop or half an ounce of honey were added.

It has always been said that this interference was due to the presence of certain organic ingredients of the urine, urea, coloring-matter, etc.; and, in order to get rid of them, we must filter the urine through finely-powdered animal charcoal.

This method is an effectual one, but not very convenient for the busy physician.

I have found that boiling urine possesses the property of *dissolving the precipitated red copper oxide.* But this power is limited; and if we add sufficient copper sulphate to begin with, to satisfy this property of the urine, and a little over for the sugar to act upon, the reaction will be perfectly satisfactory.

But, when three or four drachms of urine are used, as is generally the case, the quantity of potash solution which it will be necessary to add, in order to produce a clear blue color, will overrun an ordinary-sized test-tube. Therefore—

Take about ten drops of the suspected urine, and to it add two or three drops of a solution of copper sulphate, strength ʒj–℥j. *Then carefully pour in the alkaline solution until a clear blue color appears. Now boil, and, if sugar be present, the reaction will be perfectly distinct.*

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[1] Abstract of a paper read before the Northwestern Medical and Surgical Association.

Notes of Hospital Practice.

BELLEVUE HOSPITAL.

SURGICAL DIVISION.

Ununited Fracture of the Tibia; Necrosis.—The patient received an injury, some seven months ago, by the caving of an embankment, and on admission to hospital it was found that he presented a compound comminuted fracture of the tibia and fibula, about the middle third. The wound communicating with the fracture was situated over the fracture of the tibia, and through this it was found that the tibia was fractured in two places, an inch and a half apart. The wound was sealed up and a plaster-of-Paris bandage applied, leaving a fenestrum in the bandage over the wound. Cellulitis shortly developed, and in a few days an abscess formed at the site of the fracture. This was evacuated by free incisions, and the limb removed from its plaster-of-Paris dressing, and placed in the wire apparatus. After the abscess had ceased to discharge freely, plaster-of-Paris dressing was again applied. Through the fenestrum pus and portions of necrosed bone came away, but up to the present time there is no sign of the fragments uniting. The patient has suffered from syphilis, and since admission to hospital has been under antisyphilitic treatment.

Dislocation of the Hip; reduced by Reid's Method.—The patient, while stooping, was injured by a heavy body falling on his back. When he was examined in the ward, the head of the femur was found to rest in the sciatic notch.

Dr. J. W. S. Gouley endeavored by Reid's method of manipulation to reduce it, but in his first two attempts failed, the head of the bone passing below the acetabulum. At the third effort one hand was pressed over the trochanter major, and in this way the head of the femur was conducted into the acetabulum.

Sinus simulating Disease of the Hip-Joint treated by Villate's Mixture.—The patient was a man aged twenty-five years, who had been previously an orderly in the hospital. He had received an injury to the hip by a fall, and from this an abscess developed, which opened and left a sinus, continuing for months. From the fact that there was pain both at the hip and at the knee, morbus coxæ was suspected, and the patient was placed in the wire breeches. It was decided, however, to try the effect of *Villate's mixture*, as an experiment. Injections, containing one part of the mixture to four of water, were applied to the sinus every third day, each injection being carefully washed out with water. After a week or ten days the thigh was very much swollen, and this was attended with considerable constitutional disturbance. This readily passed away, and it was found that the sinus had sloughed out, leaving a healthy granulating surface, which slowly healed.

The original formula of the mixture is as follows:

℞.	Liq. plumbi subacetatis,	℥j.
	Zinci sulphat. cryst.,	
	Cupri " "	āā ʒ ss.
	Aceti vini albi,	fl ℥ vjss.

M. Dissolve the sulphates of copper and zinc in the vinegar and then add the subacetate of lead. Shake before using.

It is well to begin with a more dilute solution than was used in the present case, in order to avoid the risk of extensive sloughing.

Cystitis.—The solution of silicate of soda has recently come into use in this disease as an injection. The strength of the solution is one grain of the silicate to an ounce of water. It is also important to have the salt as feebly alkaline as will allow of solution. The injections are to be made every alternate day by means of a rubber catheter and only an ounce at a time. This appears to answer fully; better than any other agent so far tried.

Meningitis, Traumatic.—A case of traumatic meningitis was reported in the May number of the Journal, and since that time has developed a strange sequel. The recapitulation of the case is as follows:

The patient, a bar-tender, was clubbed in a fray, and developed meningitis. He entered the hospital April 27th, having been under treatment for meningitis seven days. He gradually recovered physically and mentally, but suffered much from headache. August 8th, was taken with a copious discharge of clear fluid from the right nostril. This continued all that night and the succeeding day, and in a less degree up to the present. The amount of fluid passed from the nostril that night was closely estimated at a quart, and the mystery of the case is, Where did it come from? Since this flow was established, the patient has not complained of headache.

MEDICAL DIVISION.

Pleurisy with Effusion; Vocal Fremitus over the Fluid.—The interest of the case rests on the fact that, notwithstanding the patient had an extensive effusion on the right side of the chest, the vocal fremitus was not only present over the fluid, but really exaggerated.

Nearly all of the standard authorities on diseases of the chest claim that vocal fremitus is not found over effusions, but this case is of special note in proving the falsity of considering it a pathognomonic sign. There could be no doubt of the diagnosis, as the fluid was subsequently removed by the aspirator.

The history of the disease was to the effect that, on May 28th, the patient was seized with a sharp pain in the side, dyspnœa and general prostration. On June 1st he was admitted to the hospital, when a physical examination revealed a flat percussion on the right side as high up as the angle of the scapula, with partial displacement of the heart to the left and the liver downward.

The vocal fremitus remained after the patient was aspirated twice, but after the third time it disappeared. At first, when the aspirator was used, clear serum was withdrawn to the extent of seventeen and a half ounces; on the second occasion thirteen ounces was obtained. After this the patient showed marked signs of prostration, with gradually-increasing dyspnœa. The needle was again introduced and fifty-two ounces of pus taken away. There was now no longer any vocal fremitus, the chest being left open to allow of the free escape of pus. The patient slowly rallied, and is now doing very well—the chest being washed out regularly by means of a double catheter. The case was under the charge of Dr. Janeway.

CHARITY HOSPITAL.

SURGICAL DIVISION.

Fracture of Head of Radius, with Fracture of Clavicle.—The patient was struck by a locomotive and received a fracture of the radius and clavicle, but on different sides. The diagnosis of radial fracture was at first rather obscure, and was mainly indicated by bony crepitus over the head of the bone, accompanied by a slight prominence. There was also painful supination with swelling around the joint. The principal interest in the case is from its rarity, and the difficulty in making the diagnosis if there is much swelling.

The case is being treated by plaster-of-Paris bandage, and so far is doing well. The fracture of the clavicle proved very troublesome. The first method adopted was to place a bag of sand on the shoulder, but the restlessness of the patient rendered this useless. The figure-of-eight bandage proved equally inefficacious, from the chafing which it caused. Finally, the adhesive-plaster appliance, as advised by Dr. Sayre, was adopted. This served a good purpose in keeping the arm in position, a result which could not be obtained by the other methods.

VENEREAL DIVISION.

Mucous Patches.—This lesion yields in a few days to the internal administration of one-fourth of a grain of the green iodide of mercury, together with the local application of the solution of the acid nitrate of mercury. The same caustic proves very serviceable in condylomata, and is used in preference to others.

Buboes.—If buboes are the results of chancroids, any attempt to prevent their suppuration by pressure, with applications of tincture of iodine, usually fails. When suppuration does take place, the dissection out of the gland by means of the handle of the scalpel is the best method to promote a speedy cure. The cavity is filled with balsam of Peru and oakum, in order to get the sore to heal from the bottom.

Epididymitis.—Many varieties of treatment have been had recourse to, but the one that gives the best results is the tobacco-poultice. The method of using it is to make a poultice with the tobacco-leaves and apply it to the scrotum at night. In the morning it is found that much of the pain has disappeared. The poultice serves a double service—first, that of an ordinary poultice; and, secondly, that of a depressant and nauseant.

Phagedenic Chancroids.—The actual cautery is used to stop the phagedenic action, and serves its purpose very well.

SMALL-POX HOSPITAL.

During the present summer the cases under treatment in this hospital have been mainly of the discrete variety. But recently they have become more grave, the number of confluent and hæmorrhagic cases being on the increase.

The treatment consists in the administration of from fifteen to twenty grains of quinine, daily, together with eight ounces of whiskey. Tincture of iodine is used as a local application to the face.

Œdema of Glottis.—One of the cases developed œdema of the glottis after the eruption had disappeared, and, from the severity of the dyspnœa, it was deemed best to operate: laryngotomy was performed, but the patient sank and died in eighteen hours after the operation.

Proceedings of Societies.

THE NEW YORK PATHOLOGICAL SOCIETY.

Dr. H. Knapp, President, in the chair.

At a meeting held June 24th, Dr. Lewis A. Sayre presented the upper end of a humerus from a man aged thirty-two years, porter, admitted into Bellevue Hospital in November last. He presented very aggravated symptoms, the shoulder being stiff and intensely painful. An abscess had formed on the inner and anterior portion of the arm, at the junction of the upper and middle third. An incision was made down to the bone, and a large quantity of pus was discharged. After this another abscess formed upon the inner surface one-half inch higher up than the other. No diseased bone could be detected with the probe. The sinus was tortuous; there was no grating or crepitus, even when pressing the bones together. Yet the character of the discharge satisfied the surgeon that the joint was involved. He did not know exactly how to describe that characteristic discharge. He designated it "pudding-juice," for want of a better term, it being of a gelatinous, viscid character. On opening the joint, it was found that the head of the bone was carious, and abundant evidences of erosion by pus were present. The humerus was exsected in the region of the anatomical neck. Even the glenoid cavity was diseased. Setons were drawn through the abscesses, the remaining diseased bone scraped, and the wound then closed with adhesive plaster. The patient was doing well.

A second specimen by Dr. Sayre was a tumor of the femur, of a mixed variety, which may be classed among the enchondromata.

A man, thirty-one years of age, was brought into the Bellevue Hospital about the 17th of June. Two years ago he was robust, healthy, with good family record, with the exception that one sister died of cancer. Two years ago, while carrying a large bar of iron across a railroad-track, his leg got fast in the track and was held there while the other men who were assisting him in carrying the bar went on and dragged him along with them. At that instant he felt something give way on the inner and posterior part of the knee-joint. It did not interfere with his duties. About two weeks afterward he observed a rounded knob at the junction of the tibia with the inner condyle of the femur, about as large as a bird's-egg, round in shape and smooth, and it grew while he still continued to work, until the measurement was twenty-seven inches around the knee when he entered the hospital. On examination, crepitation was distinctly felt at some points, and, by palpation, fluctuation could be observed at others. By passing the exploring-needle into its most prominent part, a fluid was discovered of such consistency as not to flow out, but, upon withdrawing the point of the needle, immediately a large quantity of viscid, gelatiniform mucus, of a yellowish-red color, flowed through the opening, which could not be closed up. It discharged all the afternoon and night, to the extent, apparently, of several quarts. The tumor was diminished one inch in circumference. June 24th the limb was amputated at the thigh, very nearly at its middle; and upon laying open the tumor it was found by passing the finger over the cut surface that sharp spiculæ of bone could be felt, like sharp needles. The tumor seemed to spring from the inner surface of the periosteum, at the inner condyle of the femur, and mingled through it were thin, sharp spiculæ of bone, with a large quantity of mucus filling up the interstices; and when the bone was sawed open, as shown in a section, the medullary canal was found to be filled with medullary tumors. There was a rounded mass on the middle and lower third of the tibia, springing from the spine of the same, which upon being laid open showed the same appearance as the other. The periosteum appeared to be thickened, distended, and filled with the same peculiar material.

Dr. E. D. Janeway had examined the fluid microscopically. The tumor showed round, spindle-shaped cells in the mucous intercellular substance, and in every part the same sort of material, so that one might think it proximates an enchondroma; it might be classed more particularly as a myxomatous tumor. The myxomatous changes predominate over the enchondromatous.

Dr. Erskine Mason presented a specimen through the courtesy of Dr. L. M. Yale. The case was one of hernia, occurring in Charity Hospital. The patient was a woman, about sixty years of age, admitted April 23d, for phlegmonous erysipelous inflammation of the leg and foot. On the 26th of May she complained of great pain in the abdomen, and vomited considerably. At this time she called the attention of the house-surgeon to two tumors in the groin, which were diagnosed as hernia. The one on the right side was readily reducible. She stated that it had existed seven years. The other was on the left side, about the size of young walnut, and was not reducible at that time. She stated that this tumor had existed about eighteen months. The house-surgeon made an attempt to reduce the tumor by taxis, and failed; then applied ice over the tumor, which was allowed to remain on all night, being frequently changed; and in the morning the unpleasant symptoms seemed to have been subdued, and vomiting had been relieved. She had that night a slight movement of the bowels. The tumor was then regarded as an incarcerated hernia, although not strangulated. She continued in a very favorable condition, apparently, until the 29th of May, when fluctuation was made out over the tumor, and a hypodermic syringe introduced, and a small quantity of glutinous serum drawn off. Nothing particular occurred until the 31st of May, when she was suddenly attacked with a violent pain in the abdomen, nausea, vomiting, and all the symptoms of strangulation. She positively refused an operation; nothing could be done but to palliate the suffering. On the 4th of June fluctuation was discovered again, and with the aid of the aspirator a considerable quantity of fecal fluid was drawn off. She gradually sank, and died on the 5th of June, being the tenth day from the time hernia first manifested itself, and the sixth from the time the strangulation occurred.

When the needle was withdrawn the last time, and as soon as withdrawn, quite a jet of fecal matter came out, and it continued to issue forth until death.

Autopsy.—The sac was found to have sloughed entirely away, and an inch or so of the intestine was also sloughed off, leaving the intestine open at two points. Not only this, but there were large abscesses directly below the sac, and they partook of a fecal character. There were several points of interest in this case: 1. It was extremely rare to find an original hernia in a female occurring for the first time after she had arrived at the age of fifty-seven years. 2. It was rarely, when the sack sloughed, that the integument did not at once slough off and allow the discharge of fæces from that point. Dr. Mason had seen this occur in two or three instances, and the patients had done well.

Dr. Mason thought ice an extremely valuable adjuvant in reducing direct inguinal hernia, but dangerous unless watched, because the application of ice over strangulated hernia causes pain to cease in the immediate parts while strangulation is going on.

Dr. Sayre here took the chair, while the President, Prof. Knapp, introduced a patient, and at the same time exhibited a specimen of a tumor of the optic nerve which he had extracted from the same. The nerve ran directly through the tumor. The operation was performed a fortnight ago, and is the only case performed in this country, there being only nine parallel cases on record. The patient, a woman, came under the care of Dr. Knapp about two years ago. At that time she had exophthalmia, accompanied with pain and failure of sight. With the ophthalmoscope neuro-retinitis could be seen. This gave rise to an orbital tumor, the nature of which could not be defined. Gradually the exophthalmia grew, and the eye had a sort of deviation outward and downward; and, as it was known that a majority of osseous tumors spring from the inner canthus and roof of the orbit, it was thought to be a benign growth developed in the depth of the orbit. But this could not be determined, for no symptoms of a tumor in the orbit could be made out. Within the last four or five weeks it had been possible, with the aid of the little finger, to feel a small tumor quite behind the eye; it could be felt by introducing the finger in the orbit of the eye at its superior portion, and a tumor of the optic nerve was diagnosed. It was not thought advisable to continue the course of treatment which had been pursued, which consisted of iodide of potash, and other remedies. There was no use in expecting it to be absorbed. A very able paper on the absorption of tumors had been published by a surgeon in Heidelberg. In this paper the results of operations on the eye, treated by extirpation of tumors, were noticed. This tumor is very much larger than any of those mentioned in that memoir. The idea occurred to Dr. Knapp to excise the tumor, together with the optic nerve, without destroying the eye, and if possible without destroying the muscles of the eye. The operation, witnessed by a number of medical gentlemen, was done in the usual way. The lids were held open by an ordinary wire speculum, then the incision made between the superior and inferior internal oblique recti and trochlearis muscles, and, after a few other necessary incisions, with the aid of a curved scissors the tumor was separated from its several attachments and taken from the orbit. At one time an attempt was made to separate it by the aid of a blunt instrument. It was found to be in close contact with the sclerotic from which it was separated, as it was seen to have a cortical surface. This cortical surface was in close contact with the eyeball, from which it had to be separated. The nerve was cut where it is ordinarily cut in enucleation. The operator felt his way back to the brim of the orbit and cut the tumor; then, after cutting sufficiently all around, the tumor was lifted out by the aid of a curved scissors. There was no part of the optic nerve left in the orbit. Dr. Knapp was aware that he had separated one of the muscles. It would not have been necessary, but this might have been done. Yet there was a movement up and down of the eye, but it did not move laterally. There was not a drop of pus; no suppuration whatever. The eyeball assumed its normal prominence; possibly a shade deeper in the orbit, because a portion of the orbit had been excised. The ciliary vessels, and vessels nourishing the interior of the globe, were divided. Yet, notwithstanding this, the eyeball appeared to be nourished. On the third day there was ulceration of the cornea, owing no doubt to pressure, the lids having been stitched together to afford mechanical support to the globe of the eye. This indicated that it was exceedingly dangerous to pass sutures in any plastic operation over the cornea. Whenever they press over the cornea there is liability to ulceration.

The interior of the eye was remarkable. The retina was milky in color, and hardly a blood-vessel visible. Three or four days after the operation some blood-vessels appeared again, and the retina cleared up.

Dr. Post exhibited a hand; patient was a lady, aged sixty years. She first exhibited a considerable amount of swelling over the posterior part of the metacarpal bones, and consequent pain. The idea of exsecting the diseased bones was first thought of; but, when the operation was begun, it was found that the metacarpal bones were so much diseased that a good result could not be hoped for. There was, therefore, no alternative but to amputate, which was done in the usual manner. The patient was doing well.

Dr. Sayre thought that nothing but amputation could have been performed under the circumstances. In younger persons he had seen good results follow drainage. He had never made an exsection of the wrist; yet it had been done many times. Those which he had seen attempted in this country had not been very successful. He thought, with Dr. Post, that such an extensive carious condition of the bones would hardly have been suspected from external appearances.

THE NEW YORK MEDICAL LIBRARY AND JOURNAL ASSOCIATION.

Dr. J. C. Peters, President, in the chair.

At a meeting of the Association held June 19th, Dr. Frederic D. Lente read a paper on the "Transfusion of Blood."

The paper, he said, was read not with the hope of presenting any thing new upon the subject, but in order to bring it before the medical profession for a full and thorough investigation. Transfusion would be more successful if confined to appropriate cases. So far the operation had not been oversuccessful. Yet, notwithstanding this fact, it should not be abandoned; for, if even one case were successful, it should be regarded as a triumph of science. There were circumstances in which nothing short of transfusion would save the patient.

Dr. Lente then referred to a meeting of the Academy of Medicine, held in January last, and reported in the *Medical Record* of April 1, 1874, in which remarks of Prof. Fordyce Barker on the subject are reported and reviewed at considerable length.

Among the auxiliary measures to be employed in transfusion, are maintenance of the warmth of the surface of the body; pure air; elevation of the feet in the bed; bandages; digitalis; the administration of Liebig's soluble beef-tea *per rectum*, etc. In cases of extreme vomiting in pregnancy, transfusion had been recommended.

Prof. Fordyce Barker said that if transfusion was a resource which could be made helpful, by which a certain number of lives could be saved which would terminate fatally under any other circumstances, it was very important that the medical man should avail himself of it. Since his former researches upon the subject, he had been able to add to the list of recoveries after transfusion, so that the number now amounted to about one hundred and twenty-five authentic cases. Now the question is, as to the effect of transfusion in assisting recovery—whether the cases would have terminated fatally if this measure had not been resorted to? Those who advocated transfusion were not bound to become partisans for it. While the fact is not ignored that there was efficacy in other measures, yet transfusion might add an additional resource to our list of restorative measures—one which might prove successful when no other would.

The fact of failure in seventy-five per cent. of the cases did not militate against the propriety of using the means in the other twenty-five per cent. The question how transfusion was effective in preserving life, he would leave for physiologists to answer.

Dr. J. C. Dalton discussed the question of the real value of transfusion as a curative agent. In the case of an animal, or patient, exhausted by hæmorrhage—so far exhausted that the pulse is imperceptible, intelligence very much diminished, and all the symptoms present of impending death—blood had been transfused, and the patient or animal had recovered. The apparent connection of the recovery with the transfusion was so direct, that he was led without question to conclude that transfusion was the cause of saving life. Dr. Dalton did not think it strange that, when patients had lost large quantities of blood, two or three ounces added would be sufficient to save life. There was in the human system from fourteen to eighteen pounds of blood. When one-fourth of the amount had been lost, it seemed almost impossible that life should be saved by the injection of so small a quantity. It did not strike Dr. Dalton in that way. In explanation of his reason, he likened the human system to a machine, in which latter there was a balance-wheel, the object of which was to carry the piston over the "dead point;" otherwise, if there be considerable resistance, the engine would stop. The injection of a very small quantity of blood after hæmorrhage might be somewhat analogous to that.

THE NEW YORK NEUROLOGICAL SOCIETY.

Meeting held July 6, 1874.

Prof. William A. Hammond in the chair.

The following gentlemen were elected active members: Drs. Horace P. Farnham, Richard H. Derby, J. W. S. Arnold, John C. Hannon, James J. O'Dea.

The following gentlemen were appointed a committee to investigate the Effects of Alcohol upon the Animal Economy:

Dr. Frederic D. Lente.—The effects of alcohol upon the system in general, and upon the several organs of the body (except those of the nervous system), and its value as a therapeutical agent.

Dr. William A. Hammond.—The effects of alcohol upon the brain and mind.

Dr. T. M. B. Cross.—The effects of alcohol upon the spinal cord.

Dr. T. Edwards Clark.—The effects of alcohol upon the ganglionic nervous system.

Dr. F. Le Roy Satterlee.—The effects of alcohol upon the peripheral nervous system.

Dr. Hammond gave a detailed account of the recent case of hydrophobia, resulting in the death of McCormick on the 25th of June. [Particulars regarding the *post-mortem* appearances, etc., with illustrations, will be found elsewhere in the present number of the Journal.]

Dr. Hammond concluded by recommending as treatment in hydrophobia the persistent application of the primary current—one pole being on the head, the other on the feet. He concluded by offering a series of resolutions protesting against muzzling dogs, recommending a heavy tax, and that the teeth of dogs be blunted.

The paper was discussed by Drs. Dalton, Hadden, Lente, and others.

A committee was appointed to make a full investigation of the causes, prevention, and treatment of hydrophobia—consisting of Drs. John C. Peters, Frank H. Hamilton, and J. H. H. Burge—with authority to associate others, not necessarily members of the Academy, in their labors.

Bibliographical and Literary Notes.

Art. I.—*The Physiology of Man, designed to represent the Existing State of Physiological Science, as applied to the Functions of the Human Body.* By Austin Flint, Jr., M. D., Professor of Physiology and Physiological Anatomy in the Bellevue Hospital Medical College, etc., etc. In Five Volumes. Vol. V. (With a General Index to the five volumes.) Special Senses; Generation.

Notice of the first part of fifth volume, treating of the Special Senses.

The fifth and concluding volume of Dr. Flint's great treatise on human physiology lies before us, and we think we speak advisedly in saying that it is fully equal to the four preceding volumes, and in some respects superior to them all. That portion of the volume which is devoted to a consideration of the special senses is divided into ten chapters: the first treats of the sense of *touch;* the second, of the sense of *smell;* the third, fourth, fifth, and sixth, are devoted to the consideration of the anatomy and physiology of the eye, and the sense of *vision;* the anatomy of the ear and physiology of *audition* take up the three next chapters; and the tenth chapter is devoted to the sense of *taste.*

In considering the sense of touch, there is a good distinction made between this sense and the muscular sense, the distinction being based upon the results of anatomical investigation. It is now known that the motor-nerve fibres, or conductors of the muscular sense, so called, decussate in the medulla oblongata, while the sensory fibres, or conductors of the impressions of touch, etc., decussate in the spinal cord. The term, *muscular* sense, the author considers a rather indefinite one; the brain has no appreciation of the action of the muscles except as regards the sense of fatigue, and hence this is really the only perception, aside from general sensibility, that can be called a *muscular* sense. Dr. Flint says very justly that we have no facts which show that the peculiar sense of titillation is conveyed to the brain by nerve fibres other than those of general sensibility.

The second chapter gives us a discussion upon the sense of smell. The anatomy of the olfactory nerves is given in detail, and numerous experiments are cited to prove that the sense of smell is supplied by the olfactory nerves alone. The author recognizes the difficulty of distinguishing exactly between the impressions of general sensibility and those affecting the special sense. The intimate connection between the sense of smell and that of taste is recognized and very carefully discussed.

In the third chapter we have a very full account of the anatomy of the optic nerve and eyeball. In entering upon the discussion of the sense of vision, Dr. Flint says, "Our aim is to treat of the anatomy and physiology of the organs of vision so as to make the subject clear, merely as far as its physiology is concerned;" and this has been done with great care and fidelity, and the result is as perfect as an abridged account of such a voluminous subject can be. The physiological anatomy of the optic nerve, particularly of the chiasm, is given somewhat in detail, but we think the author does not attribute sufficient importance to the investigations of Mandelstamm and Michel upon the complete decussation of the optic-nerve fibres in the chiasm, which have gone far to overturn our former ideas. Still, although we are at sea upon this point, we must wait for further confirmation of these new views before accepting them entirely. The physiological anatomy of the eyeball is also very carefully given. In speaking of the anterior elastic lamina of the cornea, Dr. Flint makes use of the expression, "this membrane *with its cells* is a continuation of the conjunctiva;" this is somewhat obscure, as the membrane of Bowman is a homogeneous structure, and has no cells; the cells spoken of are of course the epithelial covering of the cornea. Again, in speaking of the retina, it is perhaps anatomically more correct to regard the layer of hexagonal pigment-cells on its posterior surface as belonging to it instead of to the choroid, for, when we strip off the retina from the choroid, we bring the pigment-cells away with it. The account of the ciliary muscle is very interesting, but we think that Dr. Flint does not sufficiently recognize the existence of the circular muscular fibres. They have been shown to exist as a distinct layer by several writers, and Iwanoff, in the *Archiv für Ophthalmologie*, xv., 3, page 284, *et seq.*, has proved that the muscle has a different shape, and is differently constituted, in myopes and hypermetropes. Taking the emmetropic eye as the normal standard, he found the muscle in myopes was considerably thickened and drawn backward, while in hypermetropes it was thinned and pushed forward. A microscopic examination showed that the difference between myopes and hypermetropes is rather qualitative than quantitative. The muscle in a myope is not simply atrophied, but only the circular fibres are the seat of atrophy, while the longitudinal ones are hypertrophied; in a hypermetrope, the reverse is the case. By such an arrangement, the result of the lines of action of the two parts of the muscle, that is, the relaxation of the zonula, is attained much more easily in hypermetropes than in myopes; and the muscle of the myopes, as we see from the resultant of its parallelogram of forces, must, when it contracts, cause a much stronger stretching of the choroid than the muscle of hypermetropes. Examinations of the eyes of lower animals show that the ciliary muscle consists in all of them solely of longitudinal fibres, with the exception of the pig, while completely developed circular fibres only exist in apes and in man. From this we see that the longitudinal fibres really constitute the original or main form of the muscle, and the circular fibres only appear in the higher orders of animals, as additions to aid the accommodation. Hence the circular fibres in the lower animals atrophy from lack of use. In man, an accidental shortening of the visual axis may cause the emmetropic muscle to change into an hyperopic one. The completely developed hyperopic muscle, in consequence of the hypertrophy of the circular fibres, reaches its end in giving to the lens such a form that it may throw a perfectly sharp image upon the retina, with the slightest amount of the stretching of the choroid. With the increase of the demands upon the accommodation, a posterior staphyloma may develop; the eye increases in length, turns from hyperopic to emmetropic, and even to myopic.

The fourth chapter treats of the *refraction* of the eye, and is particularly satisfactory. The subject is discussed with more freedom and fullness of detail than might be expected in a work on general physiology. The laws of the refraction and dispersion of light, as well as those on spherical and chromatic aberration, are fully and lucidly explained. The section on the mechanism of refraction in the eye, though short, is well considered, and the style throughout is especially simple and intelligible. In the section on astigmatism, Dr. Flint makes use of the term "depth," in speaking of the curvature of the different meridians of the eye. We think "degree" is a better term, and it is the one generally used by physicists.

The fifth chapter discusses the subject of accommodation, and is, perhaps, the best of all, where all are good. The action of the nervous system upon the iris is given very clearly and conclusively. The subject of accommodation in the lensless eye is merely mentioned, to give place to the report of an exceedingly interesting case of this kind by Dr. Loring, never before published. In the existing state of uncertainty on this point, we could hardly expect any more.

The sixth chapter treats of binocular vision, the muscles of the eye and their movements, the parts for the protection of the globe, and the lachrymal apparatus. Dr. Flint's remarks upon the question why we do not see all objects inverted, are especially good, and his quotation from Giraud-Teulon is very apt. The section upon the movements of the eyeball is particularly clear and succinct, and a very excellent plate is given from Sappey's "Anatomy."

With the seventh chapter we come to the subject of audition. In the section upon the general properties of the auditory nerves, the author reviews the experiments with galvanism upon these nerves, and concludes that there is no positive evidence of the production of the impression of sounds by galvanic stimulation of the auditory nerves, and that the results are simply negative. A very satisfactory *résumé* is given of Rüdinger's investigations into the relations and action of the muscles of the Eustachian tubes.

The eighth chapter treats of the physics of sound, and is the best of those devoted to the special senses. The distinction between noise and music is excellent. Dr. Flint has evidently entered upon this subject *con amore.* The sections on the "laws of vibrations," "pitch and quality," "harmonics and harmony," and "tones by influence," are all exceedingly clear and thorough, and the style smooth and flowing. The chapter is in fact a monograph upon the subject, and its value in a treatise on general physiology cannot be over-estimated. Where all is so excellent, it may seem superfluous to designate any one part as particularly meritorious; yet we must say that the sections on *pitch* and *quality*, and the one on *harmonics*, are particularly deserving of mention, for the clearness of description and simplicity of explanation.

In the ninth chapter we come to the uses of different parts of the auditory apparatus. Here the uses of the membrana tympani are elaborately discussed, with special reference to the applicability of the laws of vibration, and the influence of muscular action in the mechanism of the transmission of musical sounds. Dr. Flint is decidedly of the opinion that the appreciation of the pitch of tones bears an intimate relation to the degree of tension of the tympanic membrane. He also agrees with recent writers in attributing to the muscles of the middle ear a power and office analogous to those assigned to the ciliary muscle in the eye, viz., that of auditory accommodation.

In the section on the internal ear, the functions of the cochlea are fully treated in the light of recent investigations, and the author discusses the theory of Helmholtz, that the rods of Corti constitute a harp of several thousand strings played upon, as it were, by the sonorous vibrations—and its denial by Hensen. The subject is concluded by a summary of the mechanism of audition.

The tenth chapter is the final one upon the special senses, and in it we find considered the sense of taste. Dr. Flint denies the views of Schiff, that the gustatory nerves of the anterior portion of the tongue emerge from the encephalon with the roots of the fifth pair, nor does he admit the view of Bernard, that the chorda tympani acts as a motor nerve, through the salivary glands, in moistening the gustatory membrane.

In conclusion, we would congratulate Dr. Flint most heartily, but more especially our professional brethren, upon the completion of his great work. That it ranks as high authority it is scarcely necessary to say; and, if our medical brethren gain one tithe the pleasure and profit from the perusal of this last volume that we have, we assure them that they will be amply repaid.

Art. II.—*Observations on the Pathology and Treatment of Cholera. The Result of Forty Years' Experience.* By John Murray, M. D. 16mo, pp. vi.–58. New York: G. P. Putnam's Sons, 1874.

In this little volume the author deals almost entirely with the *treatment* of cholera, with incidental remarks respecting its pathology, the essay being a digest of his experience while in India.

The author believes that cholera consists of a blood-poison, which must be eliminated through the liver, kidneys, and lungs; but experience warns him against the use of purgatives in its removal. It is stated (pp. 54, 55): "In cholera there is now no question of the priority of the action of the cholera-poison on the sympathetic or ganglionic system, which is very sensitive to great alternations of heat and cold." The disease is divided into three stages: *malaise*, diarrhœa, and collapse. The author lays considerable stress upon the importance of considering the preceding *malaise* one stage of actual cholera.

The *treatment* is according to the stage of the affection. For *malaise* the author recommends rest, the promotion of healthy digestion, occasionally stimulants, and, in malarial districts and in autumn, quinine. When *diarrhœa* supervenes, a pill, which Dr. Murray says is in common use in India, is recommended, composed of opium, black pepper, and asafœtida. In the stage of *collapse*, we are told the leading indications are to alleviate symptoms and restore the secretions. Various remedies are here advised, but we are counseled against those containing much alcohol or chloroform. The injection into the bowels of a pint of water (120° Fahr.), ½ ounce of common salt, and ½ drachm of soda, is said to relieve much of the cramping and uneasiness, and frequently to arrest the diseased process. A solution of bile and pepsine (30 grains of the former and 15 of the latter), every half-hour, was used with benefit in one of the hospitals of Calcutta.

While the author's views respecting the pathology of cholera are hardly tenable in all respects, we recommend the book to the perusal of American physicians as one chiefly valuable on account of the author's extensive personal experience in the disease of which he writes.

Art. III.—*A Conspectus of the Medical Sciences: comprising Manuals of Anatomy, Physiology, Chemistry, Materia Medica, Practice of Medicine, Surgery, and Obstetrics. For the Use of Students.* By Henry Hartshorne, A. M., M. D., Professor of Hygiene in the University of Pennsylvania, etc. Second edition, enlarged and thoroughly revised. With 477 Illustrations. Philadelphia: Henry C. Lea, 1874.

This manual is excellent of its kind, and has long been favorably known to students as a condensed and yet complete review of all the subjects pursued in the usual medical course. The new edition has been adapted to the advances that have been made in the different departments, especially that of chemistry, the means of transition from the old to the "new" chemistry forming a valuable and instructive section of the work. Both the old and new equivalents are given in most instances. The department of materia medica has also undergone some essential changes, and the nomenclature has been adapted to the last edition of the U. S. Pharmacopœia. We notice some additions in obstetrics and surgery also, and have no doubt the volume will be found useful, not only to students, but to many others who may desire to refresh their memories with the smallest possible expenditure of time.

Art. IV.—*Electro-Therapeutics. A Condensed Manual of Medical Electricity.* By D. F. Lincoln, M. D., pp. 186, 8vo. Philadelphia: H. C. Lea, 1874.

Dr. Lincoln's book is especially adapted to the use of medical students and practitioners of medicine who intend taking up electro-therapy. Indeed, we do not know where the general practitioner can find the various methods of applying electricity more clearly and intelligibly described, than in Dr. Lincoln's little manual.

The author treats successively of the physical laws of electricity, the mode of generating it, of physiology, and of diagnosis, and the mode of applying the agent. The chapter on medical and surgical practice contains some statements with which we do not entirely agree, but there is room for great latitude of opinion in the field of electro-therapeutics.

The illustrations are abundant, and of excellent quality.

Art. V.—*Materia Medica for the Use of Students.* By John B. Biddle, M. D., Professor of Materia Medica and General Therapeutics in the Jefferson Medical College, etc. Sixth edition, revised and enlarged, with Illustrations. Philadelphia: Lindsay & Blakiston, 1874.

Biddle's "Materia Medica" is well known to the profession, being a standard text-book in several of the leading colleges. The rapid sale of the work is sufficient proof of its wide appreciation, as it is little more than a year since the issue of the fifth edition. The present edition has been carefully revised, and the therapeutic portions in great part rewritten. The modern chemical notation has been adopted, and changes have been made wherever it seemed necessary in order to render the volume useful to the student of to-day.

Books and Pamphlets Received.—Nomenclature of Diseases, prepared for the Use of the Medical Officers of the United States Marine Hospital Service. By the Supervising Surgeon, John M. Woodworth, M. D. Being the Classification and English-Latin Terminology of the Provisional

Nomenclature of the Royal College of Physicians, London. Washington: Government Printing-Office, 1874.

A Case of Anchylosis of the Right Temporo-Maxillary Articulation, successfully treated by Excision of the Condyle, with Remarks. By James L. Little, M. D., Surgeon to St. Luke's Hospital, Lecturer on Operative Surgery in the College of Physicians and Surgeons, New York, etc. Reprinted from the "Transactions of the New York State Medical Society for 1874."

On the Value of High Powers in the Diagnosis of Blood-Stains. By Joseph G. Richardson, M. D., Lecturer on Pathological Anatomy in the University of Pennsylvania Hospital. Read before the Biological and Microscopical Section of the Academy of Natural Sciences, and recommended for publication in the *American Journal of the Medical Sciences.*

The Specific Action of Drugs on the Healthy System; an Index to their Therapeutic Value, as deduced from Experiments on Man and Animals. By Alexander G. Burness, M. B., C. M., University of Aberdeen, and F. J. Mavor, M. R. C. V. S., President of the Central Veterinary Society. London: Baillière, Tindall & Cox, 1874.

Diseases of the Conjunctiva. By Dudley S. Reynolds, M. D., Professor of Ophthalmology and Otology in the Louisville Hospital Medical College, Surgeon to the Eye and Ear Department of the Louisville City Hospital, etc. Read before the Kentucky State Medical Society, 1874. Louisville, 1874.

Some Practical Hints for the Treatment and Prevention of Diseases of Women. By William Goodell, M. D., Clinical Professor of Diseases of Women and Children in the University of Pennsylvania, etc. Reprinted from the *Medical and Surgical Reporter*, for January and February, 1874.

The Retrospect of Medicine; being a Half-Yearly Journal, containing a Retrospective View of Every Discovery and Practical Improvement in the Medical Sciences. Edited by W. Braithwaite, M. D., etc., and James Braithwaite, M. D., etc. Vol. lxix., January–June, 1874. London, 1874.

Memoir of the Late William C. Roberts, M. D., Vice-President of the New York Academy of Medicine, etc. By Gouverneur M. Smith, M. D. Read before the New York Academy of Medicine, April 2, 1874. New York: A. D. F. Randolph & Co., 1874. Pp. 30.

Clinical Medicine, Lectures, and Essays. By Balthazar Foster, M. D., Fellow of the Royal College of Physicians, Professor of Medicine in Queen's College, Physician to the General Hospital, Birmingham, etc. London: J. & A. Churchill, 1874.

Hints for Health: being Two Lectures on the Influence of Air, Water, Food, and Wine, on the System. By J. Sherwood Stocker, M. D., London, Physician to the Western General Dispensary, etc. London: J. & A. Churchill, 1874.

Essays on Conservative Medicine and Kindred Topics. By Austin Flint, M. D., Professor of the Principles and Practice of Medicine, and of Clinical Medicine, in Bellevue Hospital Medical College, New York. Philadelphia, 1874.

Atmospheric Electricity and Ozone; their Relations to Health and Disease. By George M. Beard, M. D. Reprinted from THE POPULAR SCIENCE MONTHLY, February, 1874. New York, 1874.

Inorganic Cardiac Murmurs. By O. T. Keyt, M. D., Cincinnati. Read before the Ohio State Medical Society, June 18, 1874, at its meeting in Toledo. From the *Lancet and Observer* for July.

Divulsion in Stricture of the Urethra. By Samuel Logan, M. D., Professor of Anatomy and Clinical Surgery, University of Louisiana. From the *New Orleans Medical and Surgical Journal.*

A New Method of treating Malignant Tumors by electrolyzing the Base. By George M. Beard, A. M., M. D., Member of the New York Society of Neurology and Electrology, etc. 1874.

The Problems and Future of Pharmacy in Germany. By Frederick Hoffmann, Ph. D. Reprinted from the *American Journal of Pharmacy,* July, 1874.

Transactions of the Eighth Annual Meeting of the Medical Association of the State of Missouri, held at Sedalia, April 21, 1874. Kansas City, Mo., 1874.

Aphorismi de Nosogenesi. Accedit practica morborum classificatio. Autore O. Bang, M. D. Editio nova, aucta et emendata. Havniæ, 1870.

The Annual Discourse before the Massachusetts Medical Society, June 3, 1874. By Nathan Allen, M. D., LL. D., Lowell, Mass. Boston, 1874.

University of Bishops' College. Fourth Annual Announcement of the Faculty of Medicine, Montreal. Session of 1874–'75.

Ninth Annual Report of the Chicago Hospital for Women and Children, for the Year ending February 26, 1874.

Announcement and Catalogue of the Detroit Medical College, at Detroit, Michigan, 1874–'75.

Transactions of the Medical Society of the State of West Virginia. Wheeling: Frew & Campbell, 1874.

Annual Announcement of the Savannah Medical College, Session of 1874–'75. Savannah, 1874.

Union University Circular and Catalogue of the Albany Medical College, 1874. Albany, 1874.

Reports on the Progress of Medicine.

SURGERY.

Prepared by SAMUEL B. WARD, M. D.

Naso-Pharyngeal Polypi.—In Brown-Séquard's *Archives of Scientific and Practical Medicine*, June, 1873, Dr. Henry B. Sands, of this city, publishes a very complete article on this subject, together with the history of a case, occurring in his service at Roosevelt Hospital, in which two operations were performed. It is stated to be of importance before operating to ascertain, as exactly as possible, the attachment of the pedicle; and to accomplish this Dr. Sands lays particular stress on the necessity of a digital examination through the mouth and behind the soft palate. In the case reported, he experienced no difficulty in tracing with his forefinger the inferior and lateral surfaces of the pedicle, and ascertaining beyond a doubt its attachment to the basilar process of the occipital bone. In the great majority of these polypi the pedicle springs from the base of the skull, either from the occipital bone, as in this case, or from the sphenoid; but it is occasionally attached to the upper part of the pterygoid fossa, the internal pterygoid plate, the greater wing of the sphenoid, the apex of the petrous portion of the temporal bone, or the edges of the posterior nares. Many authors deny that there is any diagnostic sign which can indicate the attachment of a pharyngeal tumor to the base of the skull. Hence the importance of a digital examination which Dr. Sands urges, and as he says, an examination of the cadaver will convince any one that the finger can be carried quite to the summit of the pharynx, and that the pedicle of a tumor occupying this situation could not fail to be recognized. Six methods of treatment are enumerated: 1. Avulsion or laceration. 2. Ligature. 3. Galvano-caustic ligature. 4. Caustics. 5. Electrolysis. 6. Removal by excision, or otherwise, after some preliminary operation. It is stated that the method by electrolysis may be valuable as an auxiliary, and polypi have doubtless been got rid of by this means; but the writer regards the claims which have been put forward in favor of this method of treating large tumors as extravagant and unfounded. Of all the methods of treatment the last mentioned is the one to which preference is given as most certain to afford a good opportunity of reaching the attachment of the pedicle, and of arresting any hæmorrhage which may occur. There are two varieties of this method; in the first, the superior maxilla is temporarily dislocated—the osteo-plastic method—and restored to its natural position after the removal of the polypus; in the second variety, the superior maxilla, or a portion of it, is resected. To this latter Dr. Sands gives the preference, for the reasons that much more room is obtained for the operation; that, in case the tumor returns, which happens not unfrequently, the operation for its removal a second time is very much simplified; and that, especially when only a partial resection is made, which will generally be sufficient, the disfigurement is really trifling and can be readily remedied by the dentist.

In the case, the report of which closes the paper, the first operation was made through the mouth with the *écraseur*, but, the chain breaking, the pedicle was severed as close to the skull as possible, with a stout pair of scissors. Copious hæmorrhage ensued from a large artery so deep as to be inaccessible to the ligature, which was only arrested by the prostration of the patient, who had several alarming attacks of syncope. The tumor removed measured two and three-quarters by two, and one-half by one and one-half inch. This first operation was performed on October 17, 1872. On May 10, 1873, the growth having returned, a partial resection of the upper jaw was made and the tumor removed by the galvano-cautery, in six minutes, without the least hæmorrhage. A considerable portion of the pedicle, which was found to be left, was then removed in the same manner, and smaller portions with the fingers and scissors. A small prolongation was then found to run into the sphenoidal cells, and this it was deemed imprudent to attack. The patient made a rapid recovery, and on February 1, 1874, nearly nine months after the operation, no recurrence had taken place.

In the *Berliner Klinische Wochenschrift* of last year and the year before, Dr. Bruns advocates the treatment of these polypi by electrolysis, and thinks that his cases, though few, have been so successful that this method should be tried before proceeding to a more serious operation. One of his cases was that of a patient, thirty years of age, who commenced to suffer at sixteen years of age, was operated on at eighteen, and a tumor the size of a walnut removed through the mouth. At twenty-two, the tumor having grown again, an operation was undertaken through the nose, by slipping it up, but only a portion of the growth could be removed. From that time the patient continued to suffer more and more; hearing, speaking, and breathing, were all interfered with, and he had had ten hæmorrhages, some of them serious. Electricity was employed at eleven sittings, varying in duration from ten to twenty-five minutes, during which the crackling of the gas formed could be distinctly heard, and the patient experienced a pain in the tumor and a metallic taste in his mouth. Four weeks after the last sitting, the tumor had entirely disappeared, and a cicatrix could be plainly seen, on rhinoscopic examination, on the right side of the basilar process, close to the septum narium, where the pedicle of the polypus had evidently been attached.

1.—*Case of Spina Bifida cured by Aspiration and Iodine.* By Charles M. Ellis, M. D., Elkton, Md. [Philadelphia Medical Times.]

On the 9th of May ult., I saw, in consultation with my friend Dr. R. C. Carter, a little girl, two years old, with a congenital tumor over the lumbo-sacral region of the spine. When first observed, shortly after the child's birth, it was no larger than a hickory-nut, but had now attained a longitudinal diameter of three inches, the lateral diameter being rather less: it projected above the surface about one and a half inch. It was decidedly fluctuating, and pressure produced marked uneasiness and flushing of the face. In the erect posture the tumor was tense and more resisting, but became soft and fluctuating when the child was laid on its face. It was a case of spina bifida.

The skin-covering was perfect, and the case was uncomplicated by hydrocephalus or other bodily deformity. The nutrition of the lower limbs was unimpaired. The child's health being in all respects excellent, I regarded it as a most favorable case for surgical interference. Using my hypodermic syringe as an aspirator, I evacuated the sac, drawing off more than six ounces of spinal fluid, and applied firm pressure over the sac by means of a double spica. This was done tentatively with the view of impeding its growth, which had recently been very rapid, until I could return at a future day prepared to attempt its radical cure. In a short time the sac refilled.

On the 3d of June I again saw the child. The tumor was a trifle larger than a month before. I again drew off the fluid by means of the hypodermic syringe, and, closing the orifice in the bony canal by my finger, I injected about three drachms of a solution of iodine and iodide of potassium: five grains of the former, and fifteen grains of the iodide to an ounce of alcohol. Much to my annoyance, I was unable to aspirate the iodized fluid, and after a few minutes of unsuccessful efforts I then threw into the sac a fluidounce of the spinal liquor, which had been kept at 100° Fahr. I now plugged the opening by a compress firmly held in place by a double spica. I have little faith, however, that I prevented the fluid entering the canal. For two or three days the child was very restless, had a high temperature, 106° Fahr., and frequent pulse, 140. No special symptoms of spinal irritation were developed. These unfavorable symptoms gradually subsided, and the child soon regained its accustomed health, and the tumor regained its former dimensions; but it was less elastic and less translucent, and gave to the touch a doughy feeling. The spica was replaced by an elastic pelvic bandage, which has since kept up constant pressure. Six weeks later, the tumor was notably smaller and harder, and at the date of this writing Dr. Carter informs me that the cure is perfect, the only remaining evidence of the tumor consisting in a thickening of the integuments.

With a properly-constructed aspirator (Dieulafoy's), the retention of the iodized fluid would not have occurred, and the operation would have been at once executed with speed, safety, and success.

2.—*Clinical Study of Stricture of the Œsophagus.* [British Medical Journal.]

At the meeting of the Medical Society of London, held October 20, 1873, Dr. Richardson read a "Clinical Study of Stricture of the Œsophagus." After discussing its development and diagnosis, he proceeded to state his views of treatment as follows. After defining that such treatment should be accepted as palliative and alleviating only in our present state of knowledge, the author insisted on a systematic feeding as the first rule of treatment. This would be admitted generally, but the difference was in the supply of food. The common practice was, to attempt to dilate the stricture to enable the patient to swallow; this he thought wrong, and considered that the first effort should be made to pass through the stricture a small tube by which food could be introduced, to get the parts accustomed to the tube, and to let dilatation follow. The reasons for this plan having been offered, the details of feeding were considered, and foods were classified according as they ought to be administered—by the stomach, through the feeding-tube, or by the rectum. Dr. Richardson showed that only foods of the crystalloidal and water types could be given with advantage by the rectum. Foods of colloidal character (albuminoid foods) were useless when thus given, the albumen was simply deposited on the mucous membrane and was decomposed, and occasioned flatulency and disturbance; these foods required to be digested in the stomach before they could be taken into the circulation. Fatty foods required the lacteal system for their absorption, and they also must be administered through the stomach; by the rectum, water can be introduced, and sugar, and alcohol with water: different formulæ were here described for foods requiring to be administered by either channel. For introducing food by the mouth through the stricture, a double-current tube was advisable, as the passage of gases from the stomach was often an obstacle to the passage of food. A tube, newly constructed on this principle, was exhibited. There was also exhibited another tube, through which the patient might swallow liquid food himself after the tube had been introduced; and a bottle for the feeding process, which bottle, by a change in arrangement, could be used for injection of fluids by the rectum. Directions for keeping up the temperature of the patient, and for the employment of alcohol, were noticed at length. In some cases, where there is profuse secretion in the œsophagus and accumulation of secretion above the stricture, it is advisable to clear the tube. To effect this, the author showed a tube fitted with a sponge in a sheath; the sponge answered well for absorbing and removing the secretion. Medicines could not, the author thought, be administered in cases of œsophageal stricture for the purpose of effecting a cure, but still medicinal measures were not to be despised; they were often of great value, especially those of a narcotic class. Indeed, to secure sleep was not less important than to provide food and warmth; the stomach, however, should never be troubled with medicines; they should be introduced either by subcutaneous injection, or by enemata, or by inhalation; for procuring sleep, the author preferred the method of inhalation of a volatile fluid—bichloride of methylene and pure methylic alcohol in equal parts formed the best combination for this purpose. The question of dilatation of organic œsophageal stricture in certain cases was now brought under consideration, and objection was taken to all dilators that act as wedges, and which press the strictured part downward. Mr. Durham's dilators were commended as the best up to the present time. A new dilator, by the author, in which lateral dilatation was secured by air or water pressure, was laid before the Society as an instrument promising to do a great service. It was quite impossible, the author believed, to tear or rupture the œsophagus with this dilator. On the performance of the operation of gastrotomy, Dr. Richardson spoke with reserve; it could, he thought, never be more than a doubtful and temporary measure, so long as we fail to control the progress of the disease in the œsophagus. If we could find means to control the progress of the stricture, then we might have to consider this operation more earnestly. The author would himself prefer to open a communication into the small intestine (if an operation were demanded) through the parietes rather than into the stomach. Dr. Richardson, in conclusion, referred briefly to the experiments he had made for the purpose of being able to feed by the veins; but, as his researches on this subject were incomplete, he proposed, with the permission of the Society, to bring them forward, at a future time, as a distinct communication. In the discussion which followed, Dr. Semple narrated several cases in which the cachexia, so universally seen in cases of malignant disease, was absent. Mr. Mason had treated very successfully traumatic stricture following oxalic-acid poisoning, by forcible dilatation. Mr. Durham also discussed, from an extensive series of statistics, the relative proportion of non-malignant strictures, about twenty per cent. being traumatic; he described and demonstrated his improved bougie dilators, made by Krohne and Sesemann; and mentioned several highly-successful cases.

3.—*A Stone in the Bladder weighing Eleven Ounces.* [Medical Times and Gazette, November 8, 1873.]

The following case occurred in the Royal Portsmouth Hospital, under the care of J. Ward Cousins, M. D.: E. W., aged fifty-five, was admitted on May 3, 1873. There was no history of gout or rheumatism. He stated that for twenty years he had suffered a great deal from gravel and stricture, and that his distress had much increased during the last three or four weeks. He looked pale and haggard, and his countenance clearly expressed prolonged suffering. Recently, he had lost flesh, and his urine had occasionally contained blood. He appeared often in extreme pain, and made frequent attempts to pass water, which constantly dribbled away, and was collected with great difficulty for examination. The urine was alkaline, fetid, and full of muco-pus. On exploring the bladder, it was found literally filled with a large calculus. The prostate gland and urethra were quite healthy. The patient had no idea that he was suffering from stone, and at once expressed his willingness to submit to an operation. A few days, however, after his admission he refused his food, and complained of tenderness over the abdomen. Delirium supervened, and he sank into a typhoid condition, and died on the 31st.

Autopsy.—The lateral operation was performed after death, but the stone could not be extracted, even with a very free division of the prostate. It was readily removed by the supra-pubic method. The calculus completely filled the bladder. It was oblong and regular in form, and weighed eleven ounces. The long diameter measured three inches and a half, the short diameter three inches, and the circumference corresponding to the long diameter ten inches. On opening the abdomen, the peritonæum presented many recent adhesions, and its surfaces were smeared with purulent secretion. The right kidney was wholly disorganized, and converted into an abscess; the left was large and flabby. The ureters were dilated. The bladder was much thickened in every part, the average thickness of the wall being about one-third of an inch. The mucous membrane was superficially ulcerated, and covered with phosphatic deposit. About an inch behind the orifice of either ureter, the internal surface of the bladder was marked with a rounded opening leading into a large sacculus. These sacculi were equal in size, and were each capable of holding three or four ounces of fluid. Their structure was thin, and they appeared to be simple protrusions of the mucous and serous coats of the bladder.

Remarks.—The retention which occurred in the first case was caused by vesical atony. The bladder had lost its expulsive power, but the paralysis was only temporary, and probably it was caused by accidental distention of the organ. The patient suffered much in the act of passing water, and very probably he voluntarily retained his urine to avoid pain. On the other hand, the retention may have been caused by the accidental position of the calculus. Atony of the bladder is, in my experience, a condition rarely seen in children. It, however, often happens to old people associated with disease of the prostate and chronic cystitis. In children, the presence of a stone generally excites great irritability of the bladder, and causes frequent micturition. In the one case the difficulty arose from the high and contracted condition of the bladder. If that viscus had been previously injected with a few ounces of water, it would have greatly facilitated the discovery and extraction of the stone. The above case is a remarkable one. The patient had been the subject of calculus for many years, but at the time of his admission he had no idea of the nature of his disorder. Here, the severity of the symptoms was certainly not in proportion to the size of the calculus. On looking at the case, it appears marvelous that the patient could have endured for so long a time the pain and irritation produced by such a concretion, but the bladder seems in these chronic cases to get accustomed to the presence of a foreign body. The stone, moreover, was fixed within that organ, and occupied the whole of its cavity, and this absence of mobility must have considerably lessened the urgency of the symptoms. The stone could not have been extracted with safety by any perineal operation. If the patient had applied earlier for assistance, the supra-pubic operation would have given him the best chance of relief. Such extreme calculi are fortunately very rare. The urine had dribbled away for years, the function of the bladder was completely destroyed, and the sacculi situated beneath it, together with the dilated ureters, were the only receptacles for the urine. The patient, in all probability, had labored under secondary disease of the kidney for a considerable period, and at his advanced age this complication would have rendered any surgical operation particularly dangerous.

OBSTETRICS AND DISEASES OF WOMEN.

1.—*The Use and Abuse of Intra-uterine Stem Pessaries.* [Medical Times and Gazette, December 27, 1873.]

At a meeting of the Obstetrical Society of London, December 4th, Dr. C. H. F. Routh read a paper, "On the Use of the Intra-uterine Stem in Uterine Diseases." The author, after premising that the most opposite opinions were held by learned men of different schools as to the usefulness of intra-uterine stems at all, pointed out that this arose from sufficient precautions not being taken before they are used; and that it was not sufficiently clearly laid down in what special uterine diseases they should be employed; and, thirdly, in the quality of the instrument to be selected. Where proper care was taken to meet these three contingencies, the use of intra-uterine stems was both safe and advantageous. I. Preliminary treatment: All inflammatory and congestive symptoms should be first combated. Local bloodletting, by leeching, scarification, or it may be by the hysterotome; in cases complicated with general induration, potassa fusa; in cases of fundal endometritis, in addition, blisters to the abdomen. In milder examples, glycerine stupes applied for a week or so to the cervix uteri, etc., besides ordinary dietetic means and occasional laxatives. 2. In some cases it was necessary, in addition, to enlarge the cervical canal by tents. The author showed that some of the accidents following the use of tents were due to the neglect of precautionary measures preceding their use; also to the tents not having been properly disinfected; also to straight tents being forced up into straight uteri, in which cases flexed tents should be used. The author explained that some sponge-tents were injurious in this way, and that from too much pressure in their preparation their expansive power was much reduced. 3. The enlargement of the canal was sometimes best effected by the hysterotome, after which he introduced a small disinfected sea-tangle tent, covered with glycerinized and partly iodized cotton, into the outer part of the opening made, and kept *in situ* by cotton plugs. This treatment was rarely followed by accidents. 4. His experience was entirely opposed to forcible and immediate dilatation by instruments. II. The author next proceeded to state the diseases in which the intra-uterine stem should be employed: 1. In cases of membranous cervix. One unsuccessful case was detailed as having led him to use the stem more heroically, and a second successful, in which this was done, was given in confirmation. 2. In cases of amenorrhœa not due to anæmia, but to a stoppage from some other accidental cause. The presence of a tent *in utero* provoked a catamenial flow. The advantages of a simple self-retaining stem over the stem made of copper and zinc were dilated upon, and a case given to illustrate the opinion. 3. In cases of dysmenorrhœa two varieties of this form of disease were given. In the first mechanical obstruction existed, and in the second the neuralgic element was most marked. Both had been cured by the elastic caoutchouc stem. 4. In cases of uterine flexion. A case of retroflexion was given, which was cured by the elastic stem, within which a spiral-coiled wire had been placed. The author recommended the use of internal stems, more particularly where Hodge pessaries had failed or could not be borne; where there was synchronously rectal disease, and where the flexions were very acute, with much fundal pain. III. The author then laid down what practice indicated as necessary conditions in the formation of an intra-uterine stem: 1. They should allow an omni-lateral movement of the uterus. 2. They should not be longer than two inches, save in exceptional cases, in order that they may not touch the fundus uteri. 3. They should be bicornate superiorly, so as to be retained *in utero*. 4. Their diameters should not be too small. 5. They should be light and not easily corroded. IV. He then proceeded to show that the instruments already used were capable of division into seven groups: 1. Those which fixed the uterus like Dr. Simpson's original instrument. 2. Ordinary cylindrical stems with a disk, and which had been made of almost every known substance. These were chiefly disadvantageous inasmuch as they fell out, and prevented the resiliency of the uterus upon itself. 3. Those with a vaginal support, either by a diaphragm or a Hodge. Like the last, they prevented the elasticity of the uterus on itself, but did not fall out. 4. Divaricating stems, as originally instituted by Graham Weir. These remained *in situ*, but they all prevented the elasticity of the uterus upon itself. 5. Coiled wire stems, which allowed for this uterine elasticity, but needed a support inferiorly. 6. Caoutchouc stems, as invented by Dr. Greenhalgh, and subsequently modified by others. 7. A modification of the fifth and sixth varieties combined, the caoutchouc stem having a thin coiled wire within. This last he had first used, and found very effective in some cases. Owing to the cornu superiorly a vaginal support could be frequently dispensed with.

Dr. Aveling said perhaps an appropriate opening to the discussion would be to call attention to a fact not mentioned by the author of the paper, viz., that intra-uterine stems were used in the seventeenth century. Henry von Roonhuyse, after dilating the cervix with gentian or sponge-tents, introduced a tent of silver, ivory, or horn, after the fashion of a screw, thicker at one end than the other, and hollow. This, he said, might be carried without inconvenience. This practice was adopted in England by James Cook in 1647.

Dr. Barnes said he was convinced that intra-uterine stems were, in properly-selected cases, of the greatest use. He had frequently employed the galvanic pessary with satisfactory results in cases of amenorrhœa, the catamenial discharge appearing and the nervous symptoms passing away. In consequence of the zinc portion becoming rough, he advised the removal and cleansing of the instrument once a fortnight. In cases of dysmenorrhœa he had, after incising the os externum, used Dr. Chambers's stem with advantage, pregnancy having frequently followed the removal of the dysmenorrhœal condition.

2.—*Ovariotomy successful in a Girl Eight Years old.* By T. Spencer Wells, F. R. C. S. [British Medical Journal, March 14, 1874.]

Ovariotomy is now so generally and so often practised that a record of any single case is only interesting when there is something unusual in the history of the patient, or some peculiarity in the operation. The facts that an ovarian tumor of sufficient size to render surgical aid necessary has been observed in a girl only eight years old, and that ovariotomy has been successfully performed, appear to be of sufficient importance to call for the publication of a short account of the case.

On January 5, 1874, a little girl, eight years of age, of German parentage, born in California, was brought to me from San Francisco, having been sent over by the advice of Dr. Levi C. Lane and Dr. Regensberger, of that city. She was rather small for her age, and the central part of the abdomen was occupied by a tense movable cyst. I arranged a consultation for the 7th of January, with Sir William Jenner and Dr. Sutro; and we all agreed that there was a cyst in the abdomen, and that I should tap it with a fine trocar and aspirator to ascertain if it were hydatid or ovarian.

On the 8th of January, Mr. Thornton administered a little chloroform, and, with the kind assistance of Dr. Sutro, I removed twenty-six ounces of opaque slightly viscid fluid, which I had no doubt was from an ovarian cyst. A hard substance like half an orange, either the contracted cyst or a hard portion of the ovarian tumor, was felt in the left side, after the fluid had all escaped.

The child did not suffer at all after the tapping, but the fluid soon began to distend the cyst again.

On the 23d of January, Sir William Jenner saw her again, and wrote: "There is nothing in the chest to contraindicate operation. The result of tapping is very interesting. I fancy now I can feel connection with pelvic contents on moving the mass, as if there were a long pedicle. I have advised very decidedly the operation of removal. Children bear operations well."

On January 27th, assisted by Dr. Tracy, of Melbourne, and by Mr. Thornton, chloro-methyl having been administered by Dr. Day, I made an incision, nearly four inches long, through the abdominal wall in the median line below the umbilicus, and divided the peritonæum to the extent of three inches. A free cyst was tapped, emptied, and drawn out with a solid mass at the base. There was a long pedicle, and I was able to pass a silk ligature and tie the pedicle in two portions without including the Fallopian tube. I cut the ends of the silk close to the knots, leaving very little tissue beyond the ligatures on cutting away the tumor. The tied pedicle and the knots of the ligature were allowed to fall back into the pelvis. On examining the uterus and other ovary with one finger, I was doubtful which ovary I had removed, though I believed it was the left. The uterus did not feel as large as a walnut, and I could not feel an ovary, nor the ligature I had just applied. The wound was closed with silk sutures passed in the mode I usually practise in ovariotomy. During the passage of the sutures, there was more difficulty than usual in preventing escape of intestines and omentum, but there was no other peculiarity in the operation. A little ascitic fluid came away after the cyst.

The solid portion of the tumor weighed three ounces, and the cyst contained twenty ounces of fluid. In the solid portion, there was a mass of bone covered with true skin, from which grew a quantity of long, light hair. The hair was rolled into balls and matted together by sebaceous matter. The skin covering the bone was perfect, and lay on a bed of adipose and areolar tissue. The bone was proved on section to be a true bone, not a mere calcareous degeneration. A full description of this cyst was given by Mr. Thornton when it was shown at the Pathological Society; and the specimen will be preserved in the museum of the Royal College of Surgeons.

During the first and second days after operation, the little patient had some pain and was rather feverish. After the third day, recovery was uninterrupted, and she sailed from Liverpool for New York on the 21st of February, twenty-five days after ovariotomy.

After the operation, I received a letter from San Francisco from Dr. Lane, in which he said: "In October, 1873, I was called in by Dr. Regensberger. There was a large abdominal tumor lying behind and beneath the umbilicus, and of such dimensions as to cause considerable anterior protrusion of the abdomen. Our diagnosis was an intra-abdominal tumor of the cysto-sarcomatous type, in which the cystic element greatly predominated. The solid portion, susceptible to palpation, lay to the left of the median line near the umbilicus. By relaxing the abdominal wall, the growth could be moved in all directions. One month later, I again saw the child, and was convinced that the tumor was rapidly enlarging, whereupon both Dr. Regensberger and I strongly advised the parents to consult you."

I was unable to ascertain with any thing like accuracy when the tumor was first observed.

3.—*The Hereditary Character of Syphilis.* [The Obstetrical Journal of Great Britain and Ireland, January, 1874.]

At a meeting of the Dublin Obstetrical Society, held November 22, 1873, Dr. Evory Kennedy, President of the Society, dwelt at some length on syphilis in his inaugural address. The following were his remarks on the hereditary character of the disease:

It will naturally be expected that we cannot turn from the subject of syphilis without touching upon its hereditary character.

Strange to say, Hunter denied its being hereditary. The result of my own observations on this subject I shall, for brevity's sake, give in the axiomatic form, claiming no authority for them beyond my own opinion, and admitting that several of the conclusions arrived at are still questions of dispute.

I have, then, satisfied myself that syphilis is *par excellence* an hereditary disease.

That it descends from the father and the mother through the tainted or poisoned ovum of both.

That its transmission through the circulation of the mother by taint in the course of the development of the fœtus is possible.

That it may be transmitted in the secondary and tertiary stages, not in the primary, unless contracted *in transitu* at birth.

That it may be transmitted in these stages by either parent without contamination of the other.

That it may be transmitted when the disease, although latent, evinces no evidence of its existence beyond the taint of the germ.

That there is a tendency in time for the taint to wear out, or the poison to become weaker in both parents.

That the life of the fœtus and the period of gestation become prolonged from month to month in succeeding gestations, until at length a living child may be born, perhaps in the eighth or ninth pregnancy. In such cases the poison is usually latent in the parent.

That syphilis is an additional cause of barrenness in both parents, but more markedly in the male.

That generally it is not productive of interruptions to impregnation.

That the disease is under the influence of treatment in both parents.

That the proper time for treatment is before impregnation, and sufficiently long before to allow of the eradication of the poison, and a complete recuperative action being established and confirmed in the system.

That mercury, properly and sufficiently administered, followed by iodides and other alteratives, can eradicate the poison in one or both parents.

That its administration, to afford the greatest security, ought to be extended to both, although evidence of the poison be perceptible only in one.

That as the effect of mercurial treatment is so disappointing when administered to the female in the progress of pregnancy, it should not then be had recourse to, unless the state of the mother herself demands it; as, for instance, on the occurrence of a primary chancre, or of urgent secondary symptoms.

The effect of the syphilitic poison upon the fœtus may cause its blight or death at any time from two months' to nine months' growth. The most frequent period for throwing off the syphilitic dead and putrid child is about the sixth, seventh, or eighth month, the motion and other evidences of vitality having ceased a month before.

The evidences of the syphilis, exhibited by the ovum and fœtus, are, in the early miscarriages, what we know as blighted degeneration of the ovum, the membranes and structures presenting a mass of gelatinous infiltrated clot, and the fœtus either representing a shriveled, old-man appearance, such as we see in a fœtus suspended for some years in a bottle of spirits, or more commonly exhibiting what are known as putrescent appearances, i. e., the body bloated, of deep-purple color, the skin desquamating with infiltrated bloody serum interposed.

Where the child tainted with syphilis is born alive, it may exhibit congenital evidences of the poison, or these may occur at varying intervals afterward.

The most frequent period of occurrence is from a few days to a few weeks after birth; and, although they present themselves at later periods, the cases are much more rare.

There can be no doubt that more tardy developments of syphilis are observed traceable to congenital poisoning, and, although latent for years, eventually coming out in secondary and tertiary forms. These tardy cases, however, are very rare indeed.

The symptoms that most frequently occur in subcongenital syphilis are, nasal obstructions, fissures and ulcerations in the verge of the natural orifices, emaciation, insomnia, cachexia, sooty skin,[1] psoriasis. The internal lesions are syphilitic degeneration of the liver, with consolidation, and gray and purplish blotches, enlargement and consolidation of the spleen, hydrocephalus, crescentic fractures of the front teeth; and synechiæ with iritic deformities and chronic interstitial keratitis also occasionally occur. When we superadd to these, syphilitic pemphigus, mucous patches, papular, vesicular, and pustular syphilides, ecthyma, impetigo, roseola, and the variety of affections of the internal skin, we may have enumerated enough for our present purpose, but not half of the multiform syphilides to which the miserable subject of congenital poisoning is obnoxious.

The proportion of cases of recovery from connate syphilides is very small indeed. They generally appear doomed from their birth,[2] wanting what the French term *viabilité*, and their existence is usually numbered by days or hours. With those attacked subsequently it is different, and the poison can, in most, be eradicated, especially when the internal organs are not engaged. The cutaneous and mucous structures are those principally attacked. The frequency of syphilitic poisoning occurring after parental engagement is supposed to be such that Diday and others recommend that the child of tainted parents be invariably treated with mercury after birth, as a preventive. This practice is not likely to find general favor, as mercurial treatment in infants is not free from danger, and it is quite soon enough to have recourse to it when evidence of syphilitic poisoning evinces itself.

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[1] *See* "Lancereaux," vol. ii., p. 176. "Nouveau Clin. Méd.," Paris, 1862, p. 665.

[2] *See* Pick, "Schmidt's Jahresb.," t. cxx., p. 194. Lancereaux, "Treat. Syph.," vol. ii., p. 204.

The sheet-anchor in congenital taint, as in syphilis generally, is mercury; but its alternation with iodide of potassium and sodium, and ioduret of iron, will be requisite; and, when mercury cannot be borne or is clearly inadmissible, then the latter medicines must be relied upon exclusively. The external use, by inunction, is necessary in all cases; and either gray powder or the bichloride, in very minute doses, will be the preparations best borne internally. Cod-liver oil is a great adjuvant in these cases. It is only loss of time attempting to administer mercury through the milk of the nurse or that of animals submitted to its influence. Teligot's experiments set this question at rest upward of thirty years since.

When the mother, from her own state, requires to undergo mercurial treatment, as she generally does, if her child evinces evidences of poisoning at or after birth, the mother's milk might be given; but I confess I feel more confidence in the milk of a fresh, untainted wet-nurse, the more especially when, at all events, mercury must be administered directly to the child. The milk should, in case of vicarious nursing, be extracted artificially from the nurse and administered to the infant through a sucking-bottle, as nothing, to my mind, justifies the application of a tainted child to the breast of a healthy nurse.

The duration of the mercurial treatment must be guided by the symptoms and progress of the case. The iodides and iron, with combinations of phosphorus, may be required to be persisted in or returned to for a much longer time, and, in cases where the liver, spleen, and other internal organs are engaged, must be our chief reliance.

THEORY AND PRACTICE.

1.—*Two Cases of Transfusion; One Recovery.* [Medical Times and Gazette, October 18, 1873.]

Dr. Stadthagen, physician to the Shed Hospital at Moabit, Berlin, communicates (*Berlin Woch.*, September 22d) a case of cholera in which he performed transfusion with success. The patient, a woman twenty-nine years of age, was brought to the hospital on August 26th with her two children, her husband having died shortly before of cholera. Prodromic diarrhœa had set in the day before, and during the night had become excessive and watery, and was soon accompanied with vomiting. On her admission at 10 A. M. she exhibited all the signs of a commencing collapse. Her skin was flaccid and cold to the touch, and the face and extremities were covered with cold sweat. The thermometer stood at 36° Cent. in the axilla, and 38° in the anus. Folds of the skin only slowly recovered themselves. Pulse 90, and small. The abdomen was flattened and fluctuating to pressure, but nowise tender. The abundant stools had the characteristic rice-water appearance, as had the matters which she vomited. Great thirst. From time to time there were cramps, and the patient complained of a sense of constriction of the chest and of painful pressure in the epigastrium. In spite of all means employed, the collapse continued to increase, and when seen at 8 P. M. the change in her countenance told plainly of the extremity which she had reached. The extremities and lips were cyanotic and the pulse and second sound of the heart could no longer be perceived; the temperature, too, had sunk to 35.4° in the axilla, and 37° in the anus. No urine had been passed for fifteen hours, and the stools came away unconsciously. In consequence of this condition of the patient, and of the great mortality that had attended the commencement of this epidemic, a very bad prognosis was delivered, and it was determined to have recourse to transfusion. About 180 grammes of defibrinated blood were injected into the median basilic vein by means of Uterhart's syringe. The operation was performed without any obstacle, and the patient being scarcely sensible of it. While the blood was being propelled, the pulse, which had almost disappeared, could again be plainly perceived. An equable diffusion of bodily heat was also sensible to the hand, the peripheric parts therefore having had their temperature much raised. One hour afterward the temperature was 36° in the axilla and 37° in the anus; the appearance and general feeling of the patient undergoing corresponding improvement. At first several stools and vomiting of colorless matters still continued, but gradually diminished in number, and then assumed a bilious color. The reaction, though slow and delayed during several days, yet met with no disturbance, the diarrhœa and nausea continuing for some time. The temperature during the three following days varied from 36.2° to 36.8°, and only on the evening of the fourth day reached more than 37°. Some highly-albuminous urine was passed after three days of anuria, and the first solid stool took place on the tenth day. The woman was discharged well on September 7th.

In a second case the operation was tried without a good result. The patient, thirty-four years of age, had been passing rice-water stools for fifteen hours, and all the cholera symptoms were developed in high degree. Neither the pulse nor the second sound of the heart could be perceived. During and immediately after the injection of blood the pulse could almost be felt, and there was a temporary amelioration in the symptoms. The patient, however, died twenty-four hours after the transfusion.

Translations.

Local Tuberculosis.—Prof. Köster, in Giessen (*Centralbl. f. Méd. Wiss.*, 1873), has made the following observations on this subject:

Miliary tubercles were found in the fungous granulations of joints, in the fungous growths of bone, in the tendinous sheaths and mucous bursæ. Tubercles also exist in fungous caries, fungous ostitis and osteo-myelitis (without inflammation of the joint); furthermore in cheesy ostitis and scrofulous osteo-myelitis and in the granulating tissue of ordinary caries. In inflamed granulating connective tissue of so-called tuberculous inflammations accompanied by progressive cheesy degeneration of the renal pelves (phthisis renalis), of the ureters and urinary bladder, of the tubes and uterus, of the vesiculæ seminalis, epididymes and testicles, in all of which structures tuberculosis can take primary origin, the author has always found miliary tubercle in the inflamed granulating connective tissue. Tubercles were also found disseminated throughout a so-called benign granuloma of the conjunctiva. In chronic inflammations of the pleuræ and pericardium, less often of the peritonæum, which are covered with an inspissated cheesy exudation, the tubercles are found in the superficial granulations under the cheesy covering instead of in the deeper substance of the false membrane. Tubercles also exist in the base and margins of phthisical laryngeal ulcers. Köster also found them in hyperæmic tissue in the vicinity of perichondritis laryngea arising from various causes. Miliary tubercles were also found in great abundance in a syphilitic chancre of the nose and in one of the penis; furthermore, in numerous probably syphilitic ulcerations of the intestine; in a recent case of elephantiasis of the labium; in abscess of the breast; in a granuloma of the iris which had burst through the cornea; in an ulcer of the tongue, etc. Occasionally the whole mass of granulations consisted mainly of tubercles with a small amount of connective tissue. In inflamed, cheesy, lymphatic glands (scrofula), numerous miliary tubercles are almost always present. The course of the majority of pulmonary phthises is that of local tuberculous processes; these originate in lobular, infundibular, or final bronchial chronic inflammations with central caseous degeneration and inflammatory fungous granulations of the surrounding connective tissue, and their extension is eccentric. The tubercles make their appearance in the granular connective tissue. Pulmonary phthises, which develop out of cheesy pneumonias without connective-tissue proliferation, do not contain tubercles if the following ulceration is accompanied by connective-tissue proliferation. In all these above cases, tubercles do not appear in healthy tissue, but always in inflammatory proliferated or newly-formed connective and granulating tissue, and the latter is the foundation for the eruption of miliary tuberculosis. By this assertion, Köster opposes Friedlander, who maintains that tubercles primarily originate in healthy tissue. In regard to the microscopic structure of tubercles, the author's description corresponds in the main with that of E. Wagner: they consist of one or more giant cells with larger and smaller cells, and reticulum; the latter will not of course be perceptible always, but is not entirely absent, as Friedlander asserts. The composition of tubercles depends essentially on the condition and proliferation of the connective tissue.—(*Prager Vierteljahrschr.*, 1874, 2.) E. F.

New Observations on the Nature and Treatment of Asphyxia of the Extremities, by M. Reynaud (*Archiv. Gén. de Méd.*).—Under this name the author describes a disease which is characterized by a cold feeling of the extremities of the hands and feet, the skin of the fingers or toes at the same time assuming a cyanotic coloration, associated with more or less painful sensations. The nose and ears may also be the seat of these phenomena, which, if continuing for a long time, may give rise to more or less extensive gangrene of the affected parts. The most remarkable fact, however, in connection with these symptoms is the symmetrical manner in which they appear in corresponding places in both extremities, and their intermittent character in many cases, a circumstance which indicates that these phenomena are probably of a nervous, vaso-motoric character. The author gives several clinical histories, the patients having been cured, or at least benefited, by his plan of treatment. Those cases in which the symptoms in the extremities are associated with visual derangements seem to be of special importance. One of these cases, which the author does not attempt to explain, was complicated with such derangements only when the symptoms in the fingers (cyanosis, anæsthesia, pain) improved, while he could see better as long as the fingers remained affected. At the time when the cyanosis in the hands was less intense, the arteries of the retina were very narrow; at times they showed constrictions, the papilla was very bright, and the veins to their smallest branches pulsated very markedly. During an attack in the extremities the venous pulsations persisted, but the arteries did not retain their normal calibre, and remained contracted and partly constricted. The author believes that these venous pulsations, contrary to the former explanations of this phenomenon, are to be attributed to the manner in which the retinal veins enter the ophthalmic vein, and this the cavernous sinus. In this space, with unyielding walls, the carotid pulsates, and with every pulsation increases the pressure which must prevent the reflux of blood from the eye, especially as the *vis a tergo* is defective from a contraction of arteries in this condition. The treatment consisted in the application of strong constantly-descending spinal currents (positive pole at the fifth cervical, negative at the lowest dorsal and lower); occasionally the positive pole was also placed over the brachial plexus, and the negative in the closed hand. According to the author, the abnormally increased irritability of the vaso-motor centre of the extremities, situated in the lowest cervical and first dorsal spinal portion, is thus diminished; that this irritability is kept up constant or intermittent in these patients by reflex action of the sensitive nerves of the periphery of those parts which, for instance, have been exposed to abnormal degrees of temperature.—(*Memorabilien*, 1874.) E. F.

The Antiphlogistic Action of Parenchymatous Injections of Carbolic Acid.—Prof. C. Hüter (*Centralblatt f. d. Med. Wiss.*) asserts that parenchymatous injections of carbolic acid, in their antiphlogistic action, are superior in effect to any other known means, such as cold or blood-letting. He employs a watery solution of pure carbolic acid containing two grammes of the acid to 100 grammes of water. The injection of 0.04 gramme of this solution at one time was not followed by the slightest toxic manifestation, and there was no dark coloration of the urine. In his experiments he did not exceed this dose, though the injections, if necessary, were repeated at intervals of one or two days without proving dangerous by a possible cumulative effect. With the exception of the pain produced by the puncture, neither pain nor swelling followed the injections. The antiphlogistic action was apparent in all the cases which were subjected to this treatment: 1. In scrofulous synovitis (white swelling or fungous inflammation) of the knee-joint. Here the injections were made into the most central portion of the joint, so that the needle touched the articulating surfaces. The pain was relieved, the high evening temperature fell considerably, and the swelling was much diminished. As the malady is very chronic, the injection must be repeated at intervals of from two to three days. 2. In subcutaneous glandular swellings tending to suppuration; in inguinal and femoral buboes; the pain, redness, and œdema disappeared and the gland gradually assumed its normal dimensions; several injections may be necessary for a cure. 3. In acute inflammations of the subcutaneous and subfascial cellular tissue, the most peripheral portion of the inflammation should be chosen, as we can calculate that the lymphatics will carry the remedy toward the inflammatory centre; in extensive inflammations injections may be made in two situations; shrinking of the tissue occurs in a few hours; also cessation of pain and fever, and resolution without suppuration, provided the latter has not already set in. 4. In traumatic erysipelas the author has made the injections at the inflammatory margin, in order to prevent, for instance, the transition of the inflammation from the forehead to the hairy scalp. The desired effect followed, but the attempt to strangle the entire inflammation by numerous injections has not yet been made. Dr. Wild has also had very satisfactory results from injections of sulpho-carbolate of soda in erysipelas. The author lays much stress on the necessity of making the injections *parenchymatous*, into the cavity of the largest joints, into the perivascular cellular tissue, and into the interior of the lymphatic glands.—(*Med. Chir. Centralbl.*) E. F.

Hysterotomy.—The formerly much-dreaded operation of extirpation of the uterus entire or in part has found warm advocates in Péan and Urdy, of Paris (*Gaz. Méd.*, Paris, 1873, 24), who both believe that, in a short time, this operation will take the same rank in surgery as ovariotomy, which formerly was also much opposed. The authors call attention to the comparative statistics of all hitherto published cases of hysterotomy and ovariotomy, which prove that successes with the former operation have not been more unfavorable than when the latter has been performed with the presence of many adhesions. Among the indications for this operation, inversion of the uterus is preëminent, when all other attempts at reposition or removal have failed. In regard to intraparietal and subperitoneal fibroids (the submucous are out of consideration), the authors also believe that this operation is permissible under certain circumstances. Subperitoneal fibroids are more easy of removal, but unfortunately they frequently adhere to neighboring organs. According to Péan, there are only two indications which call for hysterotomy in this case: 1. When the tumor has attained dimensions large enough to render respiration difficult; and, 2. If there is abundant ascites. In regard to interstitial fibroids, the operation depends on the frequency and intensity of the hæmorrhages; no definite plan of treatment has yet been established in their case, as the experiments with subcutaneous injections of ergotine have not been sufficiently numerous. In five cases of intraparietal fibroids, Péan successfully extirpated the uterus in four; the result was unfavorable in the fifth case because one ovary was left, from which an hæmatocele took origin, and the patient died on the eleventh day after the operation. In eleven cases of fibro-cystic tumors, the operation was seven times successfully performed. The practical deductions are: 1. Hysterotomy is indicated in fibrous and fibro-cystic neoplasms of the uterus when their development is so considerable as to endanger the life of the patient. 2. When the neoplasm cannot be detached from the uterus without difficulty, a separation of the entire uterus from the vagina is preferable to an enucleation of the tumor from the uterine tissue without disturbance of the ovaries.—(*Prag. Viert. Jahrsch.*, 1874.) E. F.

On Scrofulous Angina.—Dr. Joambert (*L'Union Méd.*) describes this disease as a chronic, almost indolent, malady which is but seldom complicated with swelling of the cervical glands. The frequent complication of tonsillar enlargement does not distinguish it from the other varieties of angina. In isolated cases we observe *erosions* of the pharyngeal follicles, and this seems to be pathognomonic of scrofulous diathesis. These follicles appear as if their apices had been shaved off; their bases are of a yellowish-gray color, and are disposed on a pale-colored mucous membrane and surrounded by a dense, superficial capillary net-work of blood-vessels. They are thus distinguished from the follicular pharyngitis of drinkers and smokers, in which the mucous membrane has a more or less dark-brown color. Similar erosions are also found in cases of advanced phthisis; those of scrofula are only distinguished by their appearance at an early stage. When *true ulcers* of the pharynx are present, they furnish a more positive means for the diagnosis of scrofulous throat-affections. Their chief location is the *posterior wall* of the pharynx, while syphilis usually affects the *pharyngeal* pillars and arches, and the epiglottis. Furthermore, the scrofulous ulcer has a yellow surface, surrounded by a healthy or pale mucous membrane, which is only occasionally inflamed, and soon regains i[illegible] normal color; while mucous patches are surrounded by a b[illegible]d carmine or purple areola, and the ulcer has a grayish-blue tint. Treatment with iodide of mercury has a more decided effect in the case of syphilitic ulcerations than in those of scrofula; if under this treatment, continued a fortnight, there is no amelioration, the ulcerations are due to scrofula, and a tonic, anti-strumous treatment must be substituted. In cases where syphilis is complicated with the strumous diathesis, iodide of iron and potassium should be carefully administered, with other anti-strumous remedies. Much care must be exercised in the local treatment, for which tinct. iodinii, either pure or combined with opium, chloride of zinc 1.100, or sol. acid. chromic. 1.8 to 1.4 may be employed. Nitrate of silver is only indicated after cicatrization has already advanced.—(*Schmidt's Jahrb.*)

E. F.

Differentiation of Intestinal Invagination.—Dr. O. Leichtenstein, in an article on invagination (*Archiv f. Prakt. Heilk.*, 4, 1873), refers to the following points for the differentiation of invagination of the small from that of the large intestine: 1. Invagination of the small intestine but rarely occurs during the first year of life, as also rarely during childhood in general. 2. In adults, the course of the attack in invagination of the ileum is more rapid, the phenomena more severe, than in ileo-cæcal and colon invaginations. Chronic cases are rare in invaginations of the small intestine, more frequent in those of the ileo-cæcum and colon. Severe symptoms of collapse occur more frequently in the beginning of the disease. 3. Muco-sanguinolent discharges are the rule in all invaginations, whatever their seat. Fecal evacuations, entirely normal in character (after preceding diarrhœa), were observed in ileo-cæcal invaginations, once in a colon invagination, the patient being an adult. 4. Meteorism is a very variable symptom. It is usually absent in ileo-cæcal invaginations. In invaginations of the descending colon, it was frequently recognized as affecting the transverse colon, and subsequently spread over the whole abdomen. In invagination of the ileum it was occasionally found to be confined principally to the central abdominal region, with exemption of the lateral portions and epigastrium. 5. Tenesmus is rare in invagination of the ileum, frequent in that of the colon and ileo-cæcum. 6. The tumor is usually absent in ileum invagination. Its seat in the centre of the hypogastrium speaks for this variety; when situated in the cæcal region, especially when it remains stationary for some time, it indicates ileum or ileo-cæcal invagination. The spread of the tumor, when occurring suddenly and corresponding to the course of the colon, speaks more for ileo-cæcal, less for colon invagination and excludes ileum invagination. The seat of the tumor in the left lateral portions of the abdomen would indicate ileo-cæcal or colon invagination. The tumor can never be felt in the rectum, and prolapse through the latter never occurs in uncomplicated ileum invagination. Changes in the consistency, occurrence, and disappearance of the tumor were especially observed in ileo-cæcal invagination. E. F.

The Blue Coloration of Surgical Dressings.—In an interesting paper (*Archives Générales de Méd.*, 1874) based on the study of an epidemic of blue coloration of surgical dressings, observed in 1872, in the service of M. Gosselin, which contains clinical, historical, and chemical researches on the subject, M. Longuet contends that three different varieties of this abnormal coloration must be distinguished, which he thus describes: 1. A blue coloration of pus which is due to coloring-matter derived from the system. This is formed in the interior of the tissues and is characterized by the presence of biliary and hæmatine salts which may be detected by chemical analysis; it is analogous to blue colorations of other fluids (blue urine, blue milk, blue sweat, blue serum of blisters) which are not engendered by the contact of air, but take origin in a pathological change in the fluids themselves (Ledidox, Robin). 2. A blue coloration, which is due to the pressure of fungi, and appears at a distance from the wound when the linen dressings are not frequently renewed, and is produced simply by mouldiness (blue suppuration of Cadet and Gassicourt; blue stains of Robin, Lucke, and Billroth). 3. A *special* blue coloration which is due neither to fungous development nor to a modification of the fluids, but which, as M. Longuet maintains, occurs on portions of healthy skin devoid of solutions of continuity, and whose nature is still unknown; however, it has no relation to that of suppuration. It is this latter coloration which the author has especially studied and for which he proposes the name *cyanochrosis;* it is distinguished by the following characteristics: It both appears and disappears *suddenly;* it appears on skin which is perfectly healthy, and on wounds; its duration is very variable; it produces no change in the local condition of the wounds, nor any constitutional disturbance; in its course it resembles erysipelas, and appears in the form of an epidemic; it occurs more especially when the air is humid and warm, and contains ozone, and during storms; its presence is a favorable prognostic sign; its nature is entirely unknown.—(*Lyon Médicale*, 1874.) E. F.

Cardiac Changes in Severe Paludal Fevers.—Dr. Collin says that, during his sojourn in Rome, he noticed certain cardiac phenomena in the soldiers exposed to paludal influences. He makes special mention of a man who died suddenly from exposure to malaria. Death was attributed to degeneration of the heart, which was verified at the autopsy. In the greater number of cases this is accompanied by a dilatation of the heart.

This alteration of the cardiac muscle is much more frequent than that of the endocardium in paludal infection, and, though Lameraux's description of a paludal vegetative endocarditis is admitted to be true in certain cases, this complication is of rare occurrence.

There are every year, in the army of France and Algeria, twenty-five thousand cases of intermittent fever, and fifteen hundred of acute articular rheumatism, and yet there are less than one hundred annual exemptions from the service, though the recognition of an organic souffle is always accepted as a sufficient cause for exemption. In these cases Dr. Collin has never found them to depend on the direct influence of malarial infection.

The frequency of cardiac muscular alterations in these fevers should cause the elimination of the syncopal fevers from the group of pernicious fevers.

Dr. Collin has long maintained the non-existence of such pernicious fevers, and that the fatal termination is due either to cerebral œdema, or to cardiac dilatation, though in the greater number of cases the latter is the result of diminished tonicity of the heart.—(*Bull. de Thérap.*, No. 5, 1874.)

G. R. C.

Luxation of the Tendon of the Tensor Vaginæ Femoris.—Dr. Ardennet, of Foissac, reports the following case: He was recently consulted by a laborer, who stated that, while engaged in the field at labor which required great efforts on the part of the inferior extremities, he suddenly experienced an acute pain in the right knee. On examination, the most apparent symptom was the acuteness of the pain when the right leg was moved. The leg was flexed, and with some difficulty the author succeeded in extending it. A small tumor was then found located behind and above the external condyle of the femur, which was very tender on pressure, and connected with a cord which extended downward and from within outward. The author thereupon made the diagnosis of luxation of the tensor of the fascia lata, produced by extraordinary muscular effort, and after several attempts succeeded in replacing it in its normal position. This was accomplished by exerting pressure from without inward with the thumb of the right hand while the left sustained the limb. As soon as the tendon recovered its normal position, anterior to the external condyle, the patient experienced complete relief and could walk without pain or difficulty, and on the following day returned to his customary duties.—(*Journal de Thérap.*, 1874.) E. F.

Treatment of Vulvar Pruritus.—Alum-lotions may be ordered as follows:

℞. Alumen.,	4 grammes.
Decoct. hordei,	500 "

M. Use the lotion three or four times a day.

M. Hardy frequently uses the following:

℞. Hydrarg. chlor. corros.,	1 gramme.
Aquæ destil.,	100 "
Alcohol.,	q. s.

M. A spoonful in a glass of warm water. Avoid rubbing the parts during its application.

In the vulvular pruritus which so frequently accompanies pregnancy, Dangon uses the following formula:

℞. Zinci oxidi,	4 grammes.
Sodæ boracis,	2 "
Cerat. simplicis,	15 "
Ol. amyg. dulcis,	q. s.
Morphiæ muriatis,	20 centigrammes.

M.

Bazin prescribes the following liniment:

℞. Liquor calcis,	30 grammes.
Glycerin.,	30 "
Ol. amyg. dulcis,	60 "

M.

The following has also been recommended:

℞. Glycerin.,	150 grammes.
Tinct. opii,	4 "
Ol. rosæ,	5 drops.

M.

(*La France Méd.*, No. 54, 1874.) G. R. C.

Subcutaneous Injection of Ergotine in Hæmorrhage.—Dr. J. Launer (*Bayr. Intellig. Blatt.*, 1873) employs a solution composed of ergot 2.5 grains, rectified alcohol and glycerine āā 7.5 grains. One injection contained 0.5 grain of this solution. In three out of four cases of hæmoptysis, the hæmorrhage ceased immediately, while in the fourth it failed, and the injection had to be repeated on the third day. In one case of profuse epistaxis, the hæmorrhage ceased in ten minutes after one injection. Hæmorrhage, produced by the introduction of the catheter in a patient with stricture of the urethra and hypertrophied prostate, was arrested by one injection, and the coagula came away on the following day; the hæmorrhage recurring on the third day, the author again injected a syringeful, which not only arrested the hæmorrhage, but permitted the easy introduction of the catheter. Finally, in a case of abortion at the second month, which could not be prevented, a subcutaneous injection of ergotine checked the hæmorrhage, and, in two hours after, the fœtus was discharged. A favorable result was also attained in two cases of metrorrhagia after abortion. The only inconvenience which the author has observed in these injections is the pain, which continues for several hours at the point of puncture.—(*Journal de Thérap.*, 1874.) E. F.

Local Treatment of Pulmonary Cavities.—Dr. Mosler, of Greifswald, has, in a number of cases, and with relative success, penetrated directly from the surface through the thoracic parietes into caverns, pulmonary abscesses, and bronchial dilatations, treating them like ordinary abscesses.

One or more punctures are made with a canula of sufficient size, and a small quantity of permanganate solution injected. Dr. Mosler thinks that the pulmonary parenchyma is more tolerant than is generally supposed, and that it may be acted upon through the thoracic parietes in the same manner as any other organ to which the surgeon has access. Not only pulmonary cavities but pulmonary inflammations may be treated by medicated injections, just as other neoplastic parenchymatous tumors are treated.—(*Berliner klin. Wochenschrift*, and *La Trib. Méd.*, No. 306, 1874.) G. R. C.

Treatment of Chronic Dysentery by Milk-Diet.—The advantages of a milk-diet, in diseases which leave anæmia and general debility in their course, have been often extolled by various authors, more especially by MM. Techolies and Leclerc. Dr. Clavel, in his turn, in his inaugural dissertation, reports favorably concerning this treatment in chronic dysentery. He had observed this in warm climates, but believes that the same effects may be attained in colder regions. While the milk, by its nutritive properties, effectually combats the anæmia and general debility, it also favors the cicatrization of the intestinal lesions. Ass's milk, which is lighter and contains less butter than cow's milk, agrees better than any other, especially with those patients who also have an hepatic lesion, as in this latter case the bile, which plays so important a part in the emulsion of the fatty matters, is secreted and discharged in less abundance into the intestine. The milk can be administered pure or with the addition of a small quantity of lime-water. Treatment is commenced by giving one pint in twenty-four hours, which is increased in a few days to two or three pints. At first, the diarrhœa increases considerably, but at the end of a few days the constipation is so obstinate that it is necessary to resort to an enema of oil.—(*Revue Thérap.*, January 1, 1874.) E. F.

Inhalations in Chronic Respiratory Diseases.—A large number of these affections have been confounded with tubercular phthisis. The latter disease is dependent on a general diathesis, and is, therefore, incurable by local means.

Fumigations offer the double advantage of direct application to the diseased organs, leaving the stomach undisturbed and available for a suitable regimen, which is frequently a necessary adjuvant, especially in young subjects.

After having tried all the plants recommended for this purpose, Dr. Le Pelletier has given preference, in the majority of cases, to a combination of melilot and belladonna. They are made up into packages—No. 1, melilot, sixty grains in six packages; No. 2, belladonna, thirty grains in six packages. A package of No. 1 and of No. 2 are mixed and placed in the fumigating apparatus, and the water heated. The same package may be used six or eight times if left in the apparatus and the water reheated.

If the inflammatory symptoms predominate, the proportion of melilot is to be increased. If, on the contrary, there are nervous symptoms and thoracic pains, the belladonna should be increased. These remedies, used in this manner, are perfectly safe, while their internal administration is not unattended with danger.—(*Bull. de Thérap.*, and *La Trib. Méd.*, No. 306, 1874.) G. R. C.

Use of Cubebs in Diphtheria.—Dr. Courcel (*Journal de la Mayenne*) recommends the following rules for the use of cubebs in diphtheria: The cubebs are always to be finely powdered, freshly prepared, and suspended in a liquid. It is to be given as soon as the disease is recognized, and in large doses, as the remedy never gives rise to the slightest ill effects: from twelve to thirty grammes in the twenty-four hours, according to age. The remedy is to be continued several days after the disappearance of the membranes, until there is no more danger of relapse (ordinarily three or four days). The remedy is to be renewed and its use continued upon the slightest reappearance of exudation. With this treatment is combined a tonic regimen, quinine, and in some cases the ferruginous preparations. The author has completely abandoned cauterization, which M. Trideau calls a barbarous procedure. Insufflations of tannin and detergent gargles he considers simple adjuvants, useful only in certain cases. The following formula is preferred by the author: ℞. Finely-powdered cubebs, twelve to thirty grammes; water, Malaga wine, and syrup of orange-peel, each sixty grammes. M. To be taken in twenty-four hours. —(*La France Médicale*, 71, 1873.) E. F.

Iced Clysters in Dysentery.—Dr. Wenzel, having had occasion to treat a great number of cases of dysentery, has found the best remedy to consist in the injection of ice-water into the rectum. It is an inoffensive, economical treatment, and gives extremely satisfactory results. The first case the doctor treated in this manner was one of severe dysentery. There were intense fever, abdominal pains, excruciating tenesmus, and profuse sanguineous evacuations. To check the hæmorrhage, injections of ice-water were ordered every two hours, which not only caused the sanguineous evacuations to cease, but also removed the tenesmus, enteric pains, and fever. The beneficial effect of these injections was so evident that the patient urgently demanded their repetition whenever the pains threatened to reappear. Dr. Wenzel now considers this treatment more satisfactory than any other in acute cases, although in chronic cases it can only be expected to afford a temporary and palliative effect.—(*Ann. de la Soc. de Méd. d'Anvers*, and *L'Independente*, April, 1874.) G. R. C.

Inhalations of Quinine in Pneumonia.—Gerhardt has treated seventeen cases of pneumonia by inhalations of solution of quinine. He recommends a half per cent. solution of muriate of quinine. The inhalations are made most frequently to the number of two (more rarely only one and sometimes three) between 10 P. M. and 1 A. M.

The period of the disease selected for the inhalations has a great influence on the efficacy of this treatment. On the fourth or fifth day, even when there has been no treatment, there is a very appreciable lowering of the temperature, which is particularly favorable. In conclusion, quinine inhalations are recommended not only as a powerful antipyretic but also as a means capable of moderating and abridging the morbid process.—(*Deutsche Zeitschr. f. Pract. Med.*, and *La Trib. Méd.*, No. 306, 1874.) G. R. C.

Treatment of Chronic Parenchymatous Metritis.—Prof. Crocq, in a lecture delivered at the Hospital St.-Jean, of Brussels, recommends the following treatment for chronic parenchymatous metritis:

Repose is indispensable, or at least remaining in a seated position, the legs being extended horizontally. A moderate but reparative *régime*. Cold injections three times a day. Abdominal frictions with mercurial ointment morning and night, combined with the internal administration of iodide of potassium.—(*Presse Méd. Belge*, and *La Trib. Méd.*, No. 306, 1874.) G. R. C.

Etiology of Eclampsia.—Wernich (*Berl. kl. Wochenschr.*, 1874, 42) believes that the well-known experiments of Brown-Séquard in regard to the artificial production of epilepsy can be applied to the epileptiform attacks in pregnant women, which, provided they occur without albuminuria, are to be traced to pressure on the sciatic nerve. The concomitant symptoms—formication, debility, and severe pains in the lower extremities—seem to support this view. The sexual organs comprise the epileptigone zone, as these attacks are often called forth by digital examination, etc.—(*Vierteljahrschr. f. Heilk.*, 1873, 4.) E. F.

Treatment of Salivation with Atropine.—A man, sixty-eight years of age, was admitted into the Breslau Hospital suffering from a second attack of apoplexy and hemiplegia of the left side. The first attack had affected the right side. On admission, an abundant discharge of saliva from the left labial commissure was noticed, which, according to the statement of the patient, had existed one month. In twenty-four hours between 500 to 600 cubic centimetres were discharged. This discharge continuing, M. Ebstein administered a pill of gr. .0005 of sulphate of atropine, afterward two pills a day. At the end of eight days, there was no sensible diminution. Three pills were given, and, from this time, the quantity discharged fell to 300, 275, 100, and 90. The remedy being discontinued, the discharge again appeared as before. At the suggestion of M. Heidenhain, the hypodermic injection of atropine was adopted. A dose of gr. .0003 was injected without effect; this being doubled, the discharge ceased for seven or eight minutes; with a dose of gr. .00016, the arrest lasted twelve hours. M. Ebstein surmises a permanent irritation of the secretory fibres of the salivary glands as the cause, and thus explains the remarkable action of the remedy.—(*La France Médicale*, 65, 1873.)

E. F.

New and Convenient Method of cauterizing.—The eschar produced by nitrate of silver is often too superficial, even though the applications are frequently repeated. Del Greco recommends the use of a small cylinder or pencil of polished zinc. After applying the nitrate of silver the zinc is to be passed several times over the surface already whitened by the caustic. The parts immediately assume a blackened hue, and the cauterizing action is seen to gradually become deeper. The eschar is detached in from twelve to twenty-four hours. The degree of destruction produced depends on the thoroughness of the applications and the nature of the tissues to which they are applied. This method of cauterization has been found very successful, and presents the advantage over other of being easy of manipulation, the portability of the materials the limitation of the cauterizing action to a certain zone, an being attended with but slight pain.—(*L'Imparziale*, No. 8 1874.)

G. R. C.

Miscellany.

Appointments, Honors, etc.—Dr. Levis has resigned his position as clinical lecturer on Diseases of the Eye in Jefferson Medical College. Dr. Henry Hartshorne, of Philadelphia, received an invitation from the British Medical Association to attend, as guest of the Association, the meeting held last month. Dr. Lemuel J. Deal, of Philadelphia, has been elected Professor of Chemistry in the Missouri Medical College. Dr. Washington Atlee is President of the State Medical Association of Pennsylvania. Dr. Charles W. Chancellor has resigned his position as Professor of Surgery in the Washington University, Baltimore, and has been elected Emeritus Professor of Surgery and President of the Faculty. Dr. W. W. Jones, of Toledo, has been elected President of the Ohio State Medical Society.

Prof. H. Hughes Bennett, on account of failing health, has resigned the chair of the Institutes of Medicine in the University of Edinburgh, which he had held for twenty-six years. Drs. Rutherford Pettigrew and McKendrick are spoken of as candidates for the position. Dr. Burdon-Sanderson has been appointed Professor of Anatomy and Physiology in the University College, London. Dr. J. Bell Pettigrew, of Edinburgh, has been awarded a prize by the French Academy of Sciences, for original researches and discoveries in physiology. Dr. Garrod has resigned the chair of Materia Medica and Therapeutics in King's College, London. Mr. Frederick Le Gros Clark, F. R. S., has been elected President of the Royal College of Surgeons of England. Dr. Andrew Smart, F. R. C. P., Edinburgh, has been appointed a lecturer on State Medicine and Hygiene, a new department, we believe, in the Edinburgh School of Medicine. The Government of India has authorized the establishment of a medical school at Dacca, similar to those of Calcutta and Patna. Mr. Garrod, son of Dr. A. B. Garrod, has been appointed Professor of Comparative Anatomy in King's College. Dr. Baxter succeeds Dr. Garrod in the chair of Materia Medica in the same college. Dr. Ackland was elected President of the British General Medical Council at the late session, Dr. Paget having resigned. Madame Christine

Nilsson has contributed £942 to the Westminster Training School and Home for Nurses. Dr. Alexander M. Buchanan has been elected Professor of Anatomy, and Dr. A. Wood Smith Professor of Practice of Medicine, in Anderson's University, Glasgow. Mdlle. Vögtlin has received from the Faculty of Medicine at Zurich the degree of M. D.

The Late Dr. R. W. Bull.—At a meeting of the Bridgeport (Conn.) Medical Society, held recently, the following resolutions were passed:

Whereas, It has pleased God to remove our companion, friend, and brother, Richard Winthrop Bull, M. D., who died in New York City, July 2, 1874, after a lengthened and distressing illness; and—

Whereas, We mourn the untimely loss of one who ennobled his profession by the results of long physical training, by general culture, by hatred of quackery, by willingness to assist his professional brethren with advice or labor, and by kindness to the destitute; who, by rare social gifts, improved by extensive travel and study, gained the friendship and confidence of all, and who by manly bearing as a citizen was an honor to his country: therefore—

Resolved, That while we submit to the inscrutable decrees of Providence, we, members of the Bridgeport Medical Society, realize in sorrow that his place among us may not be filled.

Resolved, That we, cherishing the memory of his friendship and his example, strive to emulate his ardent zeal for the advancement and renown of medicine.

Resolved, That we tender our condolence to his bereaved family and extensive circle of friends.

Resolved, That the Secretary transmit a copy of these resolutions to his family, the city press, and the medical journals.

Robert Hubbard, M. D.,
Geo. L. Porter, M. D.,
Robert Lauder, M. D.

N. E. Wordin, M. D., *Secretary.*

Charity Hospital Medical College of New Orleans.—A new school of medicine has been organized under the above title, in accordance with the general law of the State of Louisiana. The following is the Faculty: D. Warren Brickell, M. D., Obstetrics and Diseases of Women; Samuel Choppin, M. D., Principles of Surgery and Clinical Surgery; M. Schuppert, M. D., Operative and Orthopedic Surgery; C. Beard, M. D., Ophthalmic and Aural Surgery; J. Dickson Bruns, M. D., Theory and Practice of Medicine; S. O. Scruggs, M. D., Therapeutics and Clinical Medicine; W. H. Ford, M. D., Normal and Morbid Experimental Physiology, and Clinical Medicine; H. D. Schmidt, M. D., Histology and Pathological Anatomy; A. W. Perry, M. D., Medical Chemistry; F. Lœber, M. D., Descriptive Anatomy; Warren Stone, M. D., Surgical Anatomy. The session will begin in the first week of November, and continue till the first Monday in March. Terms for the entire course, one hundred dollars. With the excellent opportunity for clinical instruction afforded by the large hospitals of New Orleans, the new school ought to be in every respect successful. Particulars may be obtained by addressing Prof. D. W. Brickell, Dean.

The New Jersey Academy of Medicine.—The organization of this Society, as authorized by an act of incorporation, passed March 10, 1874, was perfected at a meeting held in Upper Library Hall, Newark, on the third Wednesday (17th) of June. The following were the officers elected for the current year: President, Dr. Theodore R. Varick, Jersey City; Vice-Presidents, Drs. J. A. Cross, Newark, Franklin Gauntt, Burlington, Thomas F. Cullen, Camden; Recording Secretary, Dr. P. V. Hewlett, Newark; Assistant Secretary, Dr. R. Gillman, Jersey City; Corresponding Secretary, Dr. McGill, Jersey City; Statistical Secretary, Dr. A. W. Woodhull, Newark; Treasurer, Dr. H. R. Baldwin, New Brunswick; Curator, Dr. P. V. Hewlett, Newark; Librarian, Dr. B. A. Watson, Jersey City; Directors, Dr. Wm. O'Gorman, Newark, Dr. Edgar Holden, Newark, Dr. R. F. Chabert, Hoboken, Dr. F. G. Payne, Bergen Point, Dr. H. H. Abernethy, Jersey City. A meeting of the Academy was held in Newark, July 15th.

Deaths from Chloroform.—The *Lancet* of July 25th records the death from chloroform the previous week at Adenbrooke's Hospital, Cambridge, of a man forty-seven years of age. The patient was suffering from dislocation of the humerus, but died before reduction could be effected. The quantity of chloroform given is said to have been "very small." This is the second death from the same cause that has occurred within a short time in that hospital. The same number of the *Lancet* reports a death from chloroform in the General Infirmary, Leeds, July 16th. The patient was about to have a finger amputated, and had taken only two drachms of chloroform when respiration stopped, and although the heart was heard to beat faintly twenty minutes later, respiration could not be restored. Sylvester's method and galvanism were employed. The *Lancet* of August 8th mentions still another death from chloroform, which had occurred a few days previously in the Woolwich Workhouse Infirmary. The patient was a servant-girl, and the operation was the removal of a pin from the hand. The *post mortem* revealed fatty degeneration of the heart.

Atropia in Phthisical Sweating.—Dr. James W. Williamson reports in the *Lancet* of July 25th the results of Dr. A. H. Hassall's experience with atropia in the night-sweating of phthisis. In sixteen cases in which the remedy was tried he found the perspiration either wholly arrested or materially diminished; but in only one-fourth of the number was the effect permanent. The dose given was one-eightieth of a grain, in the form of pill, with extract of gentian. The quantity was increased, as it seemed necessary, to one-sixtieth or one-fiftieth of a grain. The watery solution of atropia was found liable to spoil, and inferior in its effects to the solid dose as administered. In some patients the sensibility to the atropia rendered its use inadmissible; but in a large class of cases it is believed that it will answer a good purpose after other remedies have failed. The cases above mentioned were treated in the Royal National Hospital for Consumption, Ventnor.

Statistics of the Cholera Epidemic of 1873.—Dr. John M. Woodworth, Supervising Surgeon of the United States Marine-Hospital Service, having been designated by joint resolution of the Forty-third Congress, approved March 25, 1874, in connection with a medical officer of the Army, "to confer with the health authorities and resident physicians of such towns as were visited by the cholera epidemic of 1873, and to collect, so far as possible, all facts of importance with regard to such epidemic"—for the purpose of making a report of the same to the President of the United States, to be submitted to

Congress—has issued circulars asking detailed information on this subject. It is to be hoped, for the benefit of the profession, that all to whom the inquiries are addressed will give the matter prompt and careful attention. The value of the official report will depend in great part on the coöperation of all who can speak from personal experience and observation.

Medical Lectures in the Public Journals. — Prof. Paget publishes a card in the *Lancet* and in the *Medical Times and Gazette* of April 1st, in which he indignantly disclaims all responsibility for the recent appearance, in the *Pictorial World*, of an abstract of one of his lectures at St. Bartholomew's Hospital, with illustrations. He complains that he emphatically protested against its publication in that way, and that the editor acted in opposition to his written request. Dr. Paget says, "I venture to hope that I am not thought likely to be guilty of encouraging the appearance of my name in newspapers."

The columns of this JOURNAL will always be open for the publication of similar cards from any member of the profession who may chance to be thus aggrieved.

Death of a Famous Patient.—The patient from whom Dr. Billroth removed the larynx a short time ago, has since died, from a return of the cancerous disease on account of which the operation was performed. The man is said to have undergone several weeks of great suffering before his death, and the *Lancet* takes the opportunity of questioning the propriety of subjecting patients to extraordinary and protracted operations where it is certain that the disease will recur, and that relief can be only temporary, at best. There is some ground for objection in certain cases. The glory of the surgeon is one thing, and the comfort and welfare of the patient another. The operation was performed December 31st, and the patient died July 7th.

Archives of Ophthalmology and Otology. — The following changes, indicative of success, have been made in this valuable periodical: Drs. Emil Gruening, of this city, and Clarence J.

Blake, of Boston, will coöperate with Dr. Knapp as associate editors in conducting the English edition of the *Archives.* The numbers will hereafter be issued at intervals of as nearly three months as possible, each number containing from 112 to 160 pages. Four-fifths of all the space will be devoted to original papers, and the remainder to reviews. The last issue, No. 1 of vol. iv., which appeared last month, contains a variety of able original matter, and some admirably-executed lithographs. The *Archives* is a credit to American literature.

Swallowing a Tool-Chest.—It is reported that in the different prisons of Paris there are five or six deaths every year from the effect of swallowing what is known as an "escape-box." This remarkable box is made for the special accommodation of prisoners. It is of polished steel, about three inches long, and contains turnscrews, hammers, silk thread, and other implements necessary for escape. The box appears to be easily swallowed, but sometimes fails to reappear as intended, and the death of the victim is the result. But, when it does pass the bowels, the lucky prisoner is prepared to cut the thickest iron bars and set himself at liberty.

Professor Schiff and his Dogs.—This famous vivisector of Florence, having failed to satisfy the authorities of his humanity by the mere declaration that his experiments are always performed under chloroform, Signor Pontomari, of the Florence Society for the Prevention of Cruelty to Animals, made an unexpected visit to Prof. Schiff's laboratory, and there found a number of living dogs with open wounds in their throats. This mutilation, it was confessed, was for the purpose of preventing the dogs from howling, and thus announcing their torture to the neighborhood.

Social Science in Michigan.—A Social Science Association has been organized in Michigan. The first meeting was held in Detroit, June 28th. The society will coöperate with the American Social Science Association in the application of scientific knowledge to the welfare of mankind, especially in regard to sanitary matters.

Archives of Dermatology.—A new quarterly journal of Dermatology, with the above title, is announced by the Messrs. Putnam's Sons, to appear in October. Dr. L. D. Bulkley will have editorial charge, and will be assisted by a number of distinguished gentlemen in the branches of medicine with which the *Archives* will be chiefly concerned. Several valuable contributions are already promised for early numbers, and the editor will no doubt secure an abundance of valuable material for his readers. The price of the journal will be three dollars per annum.

Journalistic Notes.—The *Virginia Medical Monthly* gives evidence of energy and ability in its editorial management. It is to be enlarged at the beginning of the second volume (April 1, 1875), by the addition of twelve pages to each number, and the price of subscription raised from two dollars to three dollars per annum.

Anæsthesia during Sleep.—Dr. W. R. Cluness reports in the *Pacific Medical and Surgical Journal* of June, 1874, two cases in which chloroform was administered and anæsthesia produced during sleep. One case was that of a girl of eight years, and the other a girl two and a half years of age. In each case a surgical operation was performed. Neither of the patients offered the least resistance or showed any signs of consciousness in passing under the influence of the chloroform.

Incision of the Cervix Uteri abroad.—At a meeting of the Obstetrical Society of London, held June 3d, Dr. Palfrey stated that he had incised the cervix in some three hundred cases, that there was no operation so successful, and that he considered it one of the grandest operations for the relief of suffering and the cure of sterility.

Mortality in the Ashantee War.—According to the *Medical Times and Gazette*, the total number killed in battle during the Ashantee war was six—four officers and two men. Eleven others died from wounds received. Fifty-five were severely, and one hundred and thirty slightly wounded.

Recent Removal of a Waterloo Bullet.—The *Lancet* gives an account of the removal, a few weeks ago, of a leaden bullet, weighing six drachms and five grains, from the palm of the hand of a Waterloo veteran, aged eighty-three years. The ball was lodged in the hand at the battle of Waterloo, and had consequently remained there over fifty-nine years, giving little annoyance, it appears, until lately, when an abscess was formed owing to pressure during hard work. The bullet was removed, and the wound was healing rapidly.

A Living Skeleton.—John H. Salter, M. R. C. S., in the *Lancet* of December 27, 1873, gives the following interesting account of a "skeleton-man," whom he found traveling with an itinerant showman in England, for exhibition at twopence a head:

I was urgently requested by those who had seen him to ascertain if there could be any imposition, and I did so, fully anticipating that my visit would end, as such visits are likely to do, in disappointment and disgust. However, I found every means offered me to make a minute inspection, and, indeed, I was invited by those who had charge of him to "do my very worst."

I subjoin briefly the result of my investigations: Robert T——, aged thirty-two years, height four feet six inches, weight forty-nine pounds, was born of healthy parents of the laboring class in the parish of March, Cambridgeshire. His father is dead, succumbing to the effects of advanced age; his mother is living, and also two sisters, who are healthy, married, and well-grown. He describes himself, and is described by those with whom he has lived for a period of ten years, as being quite healthy, and, except in appearance, to be constituted much the same as other mortals. In appearance, however, he is actually and positively what he is represented to be, viz., a "skeleton-man," and from birth he has had the peculiar conformation which I am about to describe.

At first sight, when divested of the coverings of his arms and legs, which are simply bones, abnormally small, slightly covered by rudimentary muscles, so minute that they can with difficulty be seen and felt, below a skin of thin and shining whiteness, without a vestige of subcutaneous fat; exhibiting a head somewhat large; and face, skeletonized in like manner, with a mouth full of somewhat prominent teeth, and lips that do not meet; eyes blue, goggled, "codfishy," that roll about in sockets denuded of lashes; the skin of the cheeks stretched tightly over their projections of bone, and the chin and lower part of the face wrinkled and wizen; he certainly wears a supernatural, ghost-like, uncomfortable appearance, which, when exhibited suddenly to the heightened imagination of the inquisitive, I can quite believe has, to use the words of his exhibitor, " caused strong men to faint in all directions." However, this ghoul-like mortal ails nothing. He has been with his present master ten years; he eats, drinks, sleeps, smokes, takes exercise, and shows fits of temper and intelligence very similar to exhibitions of the same description in wayward, spoiled children. He is said to have never had a day's illness in his life; to be not particularly susceptible of cold; to be capable of drinking alcoholic drinks in somewhat large quantities; and the only faculties which appear to be defective are his hearing and his speech, the latter of which is expressed in sepulchral tones and in a jerky manner. He has a capital memory; is particularly fond of children, jewelry, and pictures; and is of a somewhat restless turn of mind and body. He does not like to be thwarted, and at these times exhibits fits of temper and violence quite inconsistent with his apparent strength. He can walk a mile or two at a stretch; when hurried, he " trots rather than runs," though he has been known to scramble through and win a race of one hundred yards. He shakes hands strongly and heartily, his grip being that of a grown man, without apparent effort. His breathing is normal. He evacuates his secretions daily. He is not " a scholar," but his intelligence is quick and keen for his station and opportunities. He has a good head of brown, straight, fine hair; rudimentary eyebrows; no lashes; no hair elsewhere over his body. His joints are large, and so is his abdomen. His chest is of fair size.

Minutely: his head is capacious, well developed before and behind; forehead somewhat low. The circumferential measurement taken round the centre of the forehead is twenty and a half inches; length from roots of hair to point of chin, five inches. His ears are round, prominent, and without lobes; his eyes full and blue, and the eyelids have no lashes. His nose is very pointed and small, with the bridge defective and indented, " fœtal." His mouth is large; his lips are thin and widely separate; teeth even, strong, regular, abundant, and projecting, not indented. He seems to wear a perpetual and ghastly grin, a veritable fac-simile of Victor Hugo's " l'homme qui rit." His voice is hollow and strong, the sounds proceeding chiefly from the chest. His sight is tolerably good. His movements are quick and active, and he is capable of moving heavy weights. His neck, which, for him, is somewhat fleshy, measures eleven and three-quarters inches in circumference.

Round the chest he is twenty-seven inches; it is much contracted, and free from any muscular development whatever. There is a small quantity of subcutaneous fat about the regions of the chest, back, and abdomen. The clavicles are much bent. The lungs are healthy, and the respiration is normal. The heart-sounds are vigorous and even; the pulse at the wrist is feeble; the veins are large. He measures round the large ribs twenty-seven inches. His scapulæ are well formed but project; his back is slightly rounded. All his joints are large and somewhat stiffened, and there are excoriations, the result of friction. His arms measure, round the prominence of the deltoid, five and one-quarter inches right, four and three-quarters left; round the middle of the biceps, four and a half right, four and one-quarter left. The outlines of these muscles are observable. Round the elbow he is six and one-quarter inches, but barely three inches round the wrists. A ring with an aperture measuring exactly half an inch across will fall from his wrist when hung there. His upper arm is ten inches long, measured from the point of the shoulder to the lower end of the humerus; his lower arm is seven inches to the wrist-joint; two inches from wrist-joint to point of knuckles; three inches from knuckles to the end of ring-finger; nails strong, and filbert-shaped. Both are contracted at elbow-joints, which seem, like those of the hands, feet, and knees, to be partly anchylosed. From the upper edge of sternum to navel he measures twelve inches. His circumference round the belly is twenty-six inches. His genitals are defectively developed: there is a rudimentary scrotum; no testicles; the penis, without apparent foreskin or glans, is extremely minute and rudimentary, and measures about half an inch in length. There is no hair on the pubes. He measures twelve and a half inches round the thickest part of his thigh, eight and a half inches above the knee, six and a half below, and four inches round the ankle. His feet are very arched, with rudimentary toes, stiffened joints, and very pointed heels. They are six inches in length.

The main points of physiological interest appear to me to be, how this man can use so much effort with so little muscular development; and why his tissues are not nourished to a greater extent by the quantity of food consumed, which goes through the process of digestion with apparent ease, and is sufficient for the wants of any ordinary man. There has been no alteration in weight for ten years.

I content myself with giving an abstract of bare facts, the perusal of which may interest some of the members of the profession.

Bellevue Hospital.—At a recent meeting of the Commissioners of Charities and Correction, the following resolutions were adopted:

Resolved, That the Medical Board of Bellevue Hospital shall on the 1st of September be organized in the manner following, and thereafter the present Board, as at present constituted, shall cease to exist:

1. On the 1st of September the following-named physicians and surgeons shall constitute the Medical Board of Bellevue Hospital: Dr. Austin Flint, Bellevue College; Dr. Alonzo Clark, Twenty-third Street College; Dr. Alfred L. Loomis, University College; Dr. Wm. B. Eager, no school; Dr. James R. Wood, Bellevue College; Dr. Henry B. Sands, University College (College of Physicians and Surgeons); Dr. Stephen Smith, New York University; Dr. Ernst Krackowizer, no school.
2. The members of the Medical Board will, as soon as may be after September, nominate to the Commissioners of Charities and Correction such physicians and surgeons as members of the Medical Board of Bellevue Hospital as will enable the Commissioners to appoint from the persons so nominated ten members in addition to those above named, so that the Medical Board shall consist of eighteen members.
3. When the Medical Board shall have been constituted of eighteen members, they shall be divided by the Commissioners into three classes. The term of the first class shall be for three years; of the second class for five years, and of the third class for seven years. The members of each class shall be eligible for reappointment, and all appointments to fill vacancies shall be for seven years.
4. When a vacancy shall occur in the Medical Board, it shall be the duty of the Board to give public notice through one or more of the medical journals published in the city of New York of such vacancy, and to invite the application of such members of the profession resident in the city of New York as may desire to be candidates for appointment.
5. All applications for appointment shall be considered by the Medical Board, and the names of the candidates who, in the opinion of the Board, are highest in the order of merit for professional ability, attainment, and personal character, shall be transmitted to the Commissioners, who will appoint one of the candidates named to the vacancy.
6. The Medical Board will assign the service to its several members, but such service shall be continuous throughout the year.
7. The rules and regulations of the Hospital not inconsistent with the foregoing will be continued in force.
8. That a pavilion hospital be immediately erected after January 1, 1875, on Blackwell's Island, for a Maternity Hospital, to be administered by a separate Medical Board, organized in like manner to the Bellevue Medical Board.

July 28*th.*—The resolutions were adopted, with an amendment authorizing the eight members to nominate, by September next, a number of physicians and surgeons from whom the Commissioners are to choose eleven additional members of the Board, making nineteen members in all. The clause relative to the Maternity Hospital was also adopted.

Creditable Periodicals.—The following extract is taken from the *Virginia Medical Monthly*, for July:

"*The Richmond and Louisville Medical Journal*, June, 1874, page 784, says: 'The *New York Medical Journal* seems to have determined never to give this Journal credit for any of the articles or items of news extracted from it. One cannot call that Journal, under such circumstances, a very *creditable periodical.*'

"It could hardly be believed, if we did not have the fact before our eyes, in the very Journal containing this paragraph, that an editor who could thus speak of a respectable Journal would himself take *verbatim* from the *Medical Monthly* whole original articles, and various synopses made by its editor, not without labor, without giving proper credit for any thing thus copied. The June number of the *Richmond and Louisville Medical Journal* contains the article of Prof. McGuire on 'Drainage in Chronic Cystitis,' written expressly for and published in the April number of the *Monthly;* but it is credited to '*Transactions Virginia Medical Society,*' in which no part of the article ever appeared. Prof. Cabell's paper on 'Oxygen,' etc., is also copied entire, but is credited to '*Exchange.*' Of the synoptical articles that have been thus copied, also from the April number, are 'Gelseminum,' 'Protection of Hypodermic Solutions from Change by Keeping,' etc.

"We appreciate the compliment of having enriched twelve or fourteen pages of the above Journal with so large a portion of its *valuable* matter. But is it generous for 'the largest medical monthly in America' to draw so largely on the pages of a new journal, seeking much of its support from the same field, without giving proper credit for what is deemed of sufficient value to be copied at length? But we will not say that 'one cannot call *that* Journal, under such circumstances, a very creditable periodical.'"

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from July 14, 1874, *to August* 13, 1874.

WAR DEPARTMENT, ADJUTANT-GENERAL'S OFFICE,
WASHINGTON, *July* 10, 1874.

Special Orders, No. 149.

(EXTRACT.)

12. The following Boards of Medical Officers are appointed for the Examination of Assistant Surgeons for promotion, and of applicants for admission into the Medical Staff, United States Army:

At New York City.—Surgeons Joseph B. Brown, John Moore, J. H. Bill, B. E. Fryer; Assistant-Surgeon A. H. Hoff.

At San Francisco, Cal.—Surgeons Charles McCormick, C. C. Keeney, George E. Cooper; Assistant-Surgeons D. L. Huntington, Edwin Bentley.

The Boards will assemble August 4, 1874.

The junior member of each Board will act as recorder.

By order of the Secretary of War:

THOMAS M. VINCENT,
Assistant Adjutant-General.

SIMONS, JAMES, Surgeon.—Leave of absence extended two months on a surgeon's certificate of disability. S. O. 155, A. G. O., July 17, 1874.

BROWN, J. R., Surgeon.—Relieved from duty as Medical Director of this Department, having been appointed President of the Army Medical Examining Board. G. O. 7, Department of the Platte, July 23, 1874.

PAGE, CHARLES, Surgeon.—To act as Medical Director of this Department, until the arrival of the medical officer ordered to that duty. G. O. 7, C. S., Department of the Platte.

RANDOLPH, JOHN F., Surgeon.—Granted leave of absence for thirty days. S. O. 104, Department of the Platte, July 29, 1874.

WEBSTER, WARREN, Surgeon.—Relieved from duty in Department of California, and to report in person to the Surgeon-General at Washington, D. C. S. O. 154, A. G. O., July 16, 1874.

WRIGHT, J. P., Surgeon.—Assigned to duty at Fort Hays, Kansas. S. O. 117, Department of the Missouri, July 30, 1874.

GRAY, C. C., Surgeon.—When relieved by Assistant-Surgeon Middleton, to proceed to Fort Duncan, Texas, for duty at that post. S. O. 116, Department of Texas, July 28, 1874.

JANEWAY, J. H., Assistant Surgeon.—When relieved by Surgeon Wright, to proceed to Fort Wallace, Kansas, for duty at that post. S. O. 117, C. S., Department of the Missouri.

WATERS, W. E., Assistant Surgeon.—To proceed, without delay, to Fort Dodge, Kansas, and report in person to Colonel N. A. Miles, Fifth Infantry, for duty. S. O. 116, Department of the Missouri, July 29, 1874.

Brooke, John, Assistant Surgeon.—When relieved by Assistant-Surgeon Fitzgerald, to report at these headquarters for assignment. S. O. 86, Department of the Columbia, July 3, 1874.

Phillips, H. J., Assistant Surgeon.—Relieved from duty in the Department of the Columbia, to proceed to New York City, and on arrival report by letter to the Surgeon-General. S. O. 159, C. S., A. G. O.

Middleton, P., Assistant Surgeon.—Assigned to duty at Fort Clark, Texas. S. O. 116, C. S., Department of Texas.

Cronkhite, H. M., Assistant Surgeon.—Granted leave of absence for sixty days, to take effect no later than September 1, 1874, providing he furnishes a suitable substitute during his absence. S. O. 35, Military Division of the South, July 23, 1874.

Fitzgerald, J. V., Assistant Surgeon.—Assigned to duty at Sitka, Alaska Ty. S. O. 86, C. S., Department of the Columbia.

Wiggin, A. W., Assistant Surgeon.—Assigned to duty at Fort Stevens, Oregon. S. O. 98, Department of the Columbia, July 29, 1874.

Woodruff, E., Assistant Surgeon.—Leave of absence extended for three months. S. O. 168, A. G. O., August 3, 1874.

Harvey, P. F., Assistant Surgeon.—Assigned to temporary duty as Post-Surgeon, at Fort Preble, Me. S. O. 140, Military Division of the Atlantic, July 18, 1874.

Cherbonnier, A. V., Medical Store-keeper.—To report in person to the Surgeon-General. S. O. 160, A. G. O., July 24, 1874.

McLaren, A. V., Surgeon.—Died August 1, 1874, at Boston, Mass.

Obituary.

Dr. Theodor Simon, Physician to the General Hospital, Hamburg, died recently, aged thirty-three years. Dr. Simon was favorably known to the profession throughout Germany by his labors in the field of nervous diseases, and his early death is deemed a great loss.

Dr. Thomas R. Jennings, formerly Professor of Anatomy in the University of Nashville, Tenn., died at Narraganset, R. I., July 7, 1874.

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MEDICAL JOURNAL:

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Original Communications.

Art. I.—*Nasal Catarrh; its Pathology and Treatment.* By Edward C. Mann, M. D., New York.

As the nasal mucous membrane is especially liable to become involved in the nutritive and functional disorders characteristic of catarrh, it is proper to look briefly at the anatomy of the region, the diseased condition of which we propose to treat.

The pituitary or Schneiderian mucous membrane, which lines the nasal cavities, is continuous externally with the skin, through the anterior nares, and with the mucous membrane of the pharynx through the posterior nares. From the nasal fossæ it is continuous with the conjunctiva, proceeding through the nasal duct and lachrymal canals. It may also be traced proceeding through the Eustachian tube, being continuous with the lining membrane of the tympanum and mastoid cells. It is also continuous with the frontal, ethnoidal, and sphenoidal sinuses, and antrum maxillare, through the opening in the meatuses. The nasal mucous membrane is thickest and most vascular over the turbinated bones and septum, and is very thin where it lines the intervals between the spongy bones, and also on the floor of the nasal fossa. At the upper part of the nasal fossæ the mucous membrane is covered with tessellated epithelium corresponding with the distribution of the olfactory nerve, but the remainder of it is covered with ciliated epithelium, except at the entrance to the nares. The nasal mucous membrane is abundantly supplied with mucous glands, the ducts of which open upon its surface. The arteries supplying the nasal fossæ are the anterior and posterior ethmoidal, from the ophthalmic, which supply the ethmoidal cells, frontal sinuses, and roof of the nose; the spheno-palatine, which proceeds from the internal maxillary artery, and supplies the mucous membrane covering the spongy bones, the meatuses, and septum; and, lastly, the alveolar branch of the internal maxillary artery, which supplies the lining membrane of the antrum. The olfactory nerves, which preside over the sense of smell, break up into bundles of primitive fibres, which bundles are contained in nucleated sheaths, and are composed of the finest fibrillæ, which are held together by finely granular matter. These bundles of nerve-fibres penetrate into the epithelial layer, pass outward between the epithelial cells, and probably terminate by free extremities. The finest fibrillæ of the olfactory nerves, after penetrating to the epithelial layer, are supposed to surround the epithelial cells on all sides, and with them reach the surface of the epithelial layer. The large epithelial cells are seen by the microscope to be covered with fine longitudinal striæ over their entire length, which are supposed to be the terminal extremities of these fibrillæ of the olfactory nerves.

Nasal catarrh may be defined as an acute catarrhal inflammation of the mucous membrane which lines the nasal cavities, beginning with hyperæmia of the mucous membrane, followed by swelling, accompanied at first by excessive dryness of the mucous membrane, and afterward by a secretion, which is at first thin and watery in character, and afterward, if the disease progress to any extent, becomes muco-purulent or even purulent in character, giving rise to ozœna, which term is used to denote any chronic discharge of a fetid character from the nasal cavities.

At the outset of an attack of acute nasal catarrh, the capillary vessels of the nasal mucous membrane are distended with blood, the tissues are infiltrated, and from the mucous membrane, swollen by congestion and œdema, is discharged a thin, colorless saline secretion. After the primary swelling and congestion have subsided, this secretion becomes thickened from the addition of young cells. If the disease runs into the chronic form we shall find the nasal mucous membrane considerably thickened, especially the mucous membrane covering the turbinated bones. The swellings of the nasal mucous membrane do not have their seat in the mucosa, but are œdematous infiltrations of the sub-mucous connective tissue. The swelling is dependent upon the amount of hyperæmia, so far as depends upon the increase of volume of the vessels and upon a more abundant saturation of the mucous membrane with serum. After this condition, which characterizes acute catarrh, the mucous membrane may return completely to its normal condition, but it is liable, upon very slight irritation, to again take on catarrhal inflammation; and such relapses are much more difficult to treat than was the primary disease. Each relapse increases the proliferation of cells in the sub-mucous connective tissue. The epithelium and mucous glands gradually enlarge, and the mucous membrane passes into an hypertrophied condition. In chronic nasal catarrh we find in many instances catarrhal ulcers, superficial as a rule, but which in scrofulous and cachectic patients may penetrate more deeply, destroying the perichondrium and periosteum, and giving rise to caries and necrosis of the cartilages and bones of the nose. In these cases, the secretion from the nasal passages is extremely offensive, requiring the use of deodorizing solutions of chloride of lime, or permanganate of potassa, which may be used with the posterior nasal syringe or nasal douche. A solution of glycerine containing iodine and iodide of potassium has rendered us great service in these scrofulous conditions, by aiding in the detachment of thick crusts, exfoliating bone, etc. In cases where the mucous membrane is much thickened, applications of nitrate of silver will often afford relief; but where there is relaxation of the mucous membrane, or where it has assumed the condition of mucoid polypous outgrowths, which block up the nasal passages, the best plan will be to remove such growths, either by twisting them off by forceps, or encircling them with a wire snare, and then cutting them off by drawing the loop tight, after which the remaining portions may be cauterized with nitrate of silver. The senses of smell and taste are perverted, and in chronic cases it is not uncommon to find complete anosmia resulting from the effect produced by the long-continued inflammatory process upon the terminal distribution of the olfactory nerves.

The symptoms are very varied in character, affecting some persons but slightly, while others suffer intensely from the severity and rapid recurrence of these attacks. The symptoms at the outset are a sense of dryness, irritability and obstruction in the nostrils, with difficulty in nasal respiration. There is also very often severe pain in the region of the frontal sinuses, and, if the inflammation has extended to the Eustachian tube, the patient will complain of roaring noises in the auditory canal, with some pain and dullness of hearing. There will be also a constant disposition to sneeze, which is kept up by the irritation of the inflamed mucous membrane by the saline secretion. This irritating property of the watery secretion is due to the quantity of ammonia contained in it, and very often it causes excoriation of the upper lip as it flows over it.

In chronic nasal catarrh the symptoms differ entirely, the prickling sensation in the nose, sneezing, frontal pains, and febrile action, being generally absent, while in their place we find obstruction of the nasal passages, owing to the mucous membrane being relaxed, and the membrane covering the turbinated bones hypertrophied and thickened.

There will also be found accumulations of thickened crusts of inspissated mucus at the entrance to the posterior nares. The secretion of chronic catarrh is of a mucous, muco-purulent, and (in cases of ulceration of mucous membrane) purulent character. In cases where there is no ulceration of the mucous membrane there is generally no fetor attending the discharge from the nasal passages; while in scrofulous or syphilitic cases, attended with caries, or necrosis, or even ulceration, we generally perceive it, even at quite a little distance from the patient. The length of an attack of acute nasal catarrh varies from two or three days to a week or two; while the chronic form of nasal catarrh is an exceedingly obstinate disease, lasting sometimes for years. In view of the predisposition of nasal catarrh to assume a chronic form, and of the difficulty experienced in eradicating it when it has lasted for some months, it becomes a matter of great interest to those interested in diseases of the throat and respiratory organs. By means of rhinoscopic examinations we are enabled, much more accurately than formerly, to determine the seat and progress of nasal catarrh, and to make local applications to the mucous membrane covering the turbinated bones and septum, which are the parts especially liable to take on ulceration; and it is here also that we find the greatest thickening and hypertrophy of the mucous membrane, resulting sometimes in the production of mucoid polypi. These polypi owe their production to a circumscribed hypertrophy of the mucous membrane, which is especially concentrated upon the glands. The principal mass of the tumor is formed by hypertrophic glands, and it is attached to the mucous membrane by a more or less distinct pedicle.

The treatment of nasal catarrh heretofore has consisted in the application of nitrate of silver, and in the use of astringent injections, together with the employment of various snuffs containing mercurials, tannin, alum, zinc, lead, etc., all of which have signally failed to accomplish radical cures. The first indication evidently in all cases is to build up the patient's system, and, for this purpose, preparations of iron and quinine, with the use of cod-liver oil, combined with iodine in scrofulous cases, will generally suffice, toning up the system and aiding materially the local treatment. The first thing to be accomplished in the local treatment is, to clear out the nasal passages, anteriorly and posteriorly, in order to prepare the nasal mucous membrane for medication; and to this end, Thudicum's nasal douche, or the posterior nasal syringe, may be used with a warm saline solution, containing sixty grains of the chloride of sodium to the pint of water. This operation will have the effect of clearing the nasal cavities of the accumulations of crusts, and will leave the surface of the mucous membrane clear and free for the local applications. After the nasal mucous membrane has been thus prepared for the reception of medication, a solution of nitrate of silver may be applied thoroughly to the entire surface of the nasal cavity, which will have the effect of diminishing the thickening and congestion of the mucous membrane. This application is recommended to be followed by the propulsion of the vapor of iodine into the nasal passages anteriorly, by means of an instrument similar to that devised by Dr. Roosa, of this city. The instrument used by the writer is made of hard rubber, having a cavity filled with sponge which is medicated with the tincture of iodine. Upon one end of this hard-rubber apparatus is attached a nasal tube fitting into the nostril, while to the other extremity is attached a soft-rubber bulb with a flexible tube. By compressing the bulb, atmospheric air, or steam if desired, is forced through the hard-rubber apparatus containing the sponge saturated with iodine, and diffuses the vapor of iodine throughout the entire extent of the nasal cavities, exerting a powerful alterative and curative effect upon the mucous membrane of the nasal cavities and Eustachian tubes; and especially in cases of swelling and hypertrophic thickening of the mucous membrane covering the turbinated bones and septum. After a very few applications have been made, a very free flow of serum will be induced, and the sub-mucous infiltration will be much lessened. The sense of hearing, which is often impaired by the extension of the catarrhal inflammation to the Eustachian tubes, will often be restored by these applications, after the flow of serum has relieved the congestion and swelling of the mucous membrane. The sense of smell, which in chronic catarrh is often entirely obliterated, is also restored as the mucous membrane returns to its normal condition. These applications can be more or less prolonged as the cases are more or less advanced in character; fifteen minutes, however, being considered by the writer a sufficient length of time, if the applications are properly made. The use of the nasal douche should precede each application. A snuff, composed of equal parts of finely-pulverized camphor and white powdered sugar, is also given to the patient, with instructions to use it *ad libitum;* and patients are unanimous in their expressions of relief subsequent to its use. The preceding, together with the use of injections, and sprays of sulphate of zinc or copper, constitutes the writer's treatment for nasal catarrh in the acute and chronic forms, and it has proved equal to the cure of several very obstinate cases which had been considered incurable.

The following cases serve to illustrate the success of the plan of treatment recommended.

William C., fourteen years; occupation, school. Duration of disease, three years. Previous treatment consisted in applications of various catarrh-snuffs, which had done no good. There were complete anosmia and partial deafness, owing to the lining membrane of the Eustachian tubes having become affected by the extension of the inflammation into them. Enlarged veins could be seen on the posterior pharyngeal wall. Examination anteriorly with nasal speculum revealed a congested and swollen condition of the mucous membrane, with considerable infiltration. At the posterior part of the right nostril could be seen, projecting into the nasal cavity, a small mucoid polypus, which occluded the nasal passage considerably, preventing the free nasal respiration which should take place. Rhinoscopic examination revealed a very red and thickened appearance of the mucous membrane covering the turbinated bones, particularly the middle and lower ones, and also the septum. The secretion from the nasal passages was composed of mucus, and at times was muco-purulent in character. The patient had lost all power of distinguishing different odors, and his voice had acquired a strong nasal twang. He was obliged to keep the mouth open during respiration, owing to the partial occlusion of the nostrils by the hypertrophic thickening of the nasal mucous membrane, and the presence of the small polypus before alluded to. The treatment was commenced by a very thorough use of Thudicum's nasal douche, with a warm saline solution. This resulted in the detachment and expulsion of a large accumulation of crusts of inspissated mucus.

After this operation the mucous membrane of the nasal cavities was painted over with a solution of nitrate of silver in glycerine, sixty grains to the ounce. On the following day the nasal douche was again used, and the operation followed by the propulsion of the vapor of iodine by means of the instrument previously described. After this application the patient complained of a slight burning sensation, which soon passed away. After the fourth application of this character, there was a very free flow of serum induced, which relieved the patient greatly, diminishing the swelling of the mucous membrane. The patient was given a snuff, composed of equal parts of pulverized camphor and powdered sugar, to be used by him *ad libitum*; and three successive boxes were given him, as he seemed to be so much relieved by its use. The small mucoid polypus was twisted off, and the attachment of the mucous membrane cauterized with the nitrate of silver. Upon microscopical examination this tumor was found to consist principally of enlarged glands, the remainder being mucous tissue. The above-mentioned treatment was persisted in for three months, the use of the nasal douche preceding each application of the iodine. At the end of that time the swelling of the mucous membrane, together with the discharge from the nasal passages, had entirely disappeared. Nasal respiration was reëstablished, the partially-obliterated sense of hearing reappeared, and the sense of smell at the termination of treatment was normally acute.

Elizabeth G., eleven years of age; duration of disease, eight months. Rhinoscopic examination revealed congestion and swelling of the mucous membrane of turbinated bones and naso-pharyngeal cavity, but no apparent thickening. There was excessive secretion of mucus, and partial loss of smell. The nasal douche was used, and the nasal cavity painted over with the following:

℞.	Iodini,	gr. vj.
	Potass. iodid.,	gr. xij.
	Glycerin.,	℥ ij. M.

This was followed by the propulsion of the vapor of iodine, applications being made every other day, and in a little less than three weeks the disease had yielded completely to treatment, and the patient was discharged. During the treatment of the above-mentioned case, the patient, being insufficiently nourished, was put upon a mixture of cod-liver oil and syrup of the iodide of iron. The camphorated snuff was also given her to use.

Another case, in a boy sixteen years old, was complicated with glandular enlargements at the vault of the pharynx, to which the writer's attention was drawn from the patient's complaint of the constant dropping of mucus from "the roof of his mouth," as he expressed it. Upon rhinoscopic examination there was seen to be, in the naso-pharyngeal cavity, lying between the orifices of the Eustachian tubes, an irregular chain of highly-congested glands, whose free extremities depended from the vault of the pharynx. These vegetations were covered with a copious secretion of mucus, which kept dropping constantly into the back part of the throat, and were expectorated by the mouth. Upon removing the adherent clumps of mucus with a sponge, a few small drops of blood exuded from the fungoid mass, showing that it was very vascular. These growths encroached somewhat upon the orifices of the Eustachian tubes, giving rise to considerable deafness. As the growths were too small to be crushed, or torn off by forceps, as is recommended by Cohen, Meyer, and others, they were cauterized by means of nitrate of silver, and daily injections of sulphate of copper (ʒ ij ad aquæ ℥ j) were employed, which caused their destruction and disappearance. The patient was then treated in the usual way for his nasal catarrh, which soon disappeared, the principal difficulty residing in the glandular hypertrophy.

Many cases of simple acute catarrh have been treated at the outset by the simple propulsion of the vapor of iodine, and the administration of a full dose of some diffusive stimulant, such as muriate of ammonia, opium, hot punch, etc., at bedtime, with the result of abating the attack in two or three days.

According to the writer's experience, if cases can be seen at the outset, or before thickening of the mucous membrane has taken place, they can be easily cured, while cases of long standing invariably require protracted treatment for the accomplishment of a thorough cure.

Art. II.—*Inebriation; its Pathology and Treatment.* By T. D. Crothers, M. D.[1]

As a preface to what I shall say on the pathology of inebriety, it is necessary to define the physiological influence of alcohol on the system, and more particularly so because of the vagueness and uncertainty in the minds of the profession regarding alcohol.

Some late investigations indicate that alcohol is not a stimulant in a literal sense,[2] but a diminisher of vital force; suspending interstitial activity, and resulting in vaso-motor paralysis.

This theory has been accepted by many pathologists, although not recognized therapeutically.

A brief review of its physiological principles will give a clearer view of the subject.

Alcohol affects the system in three separate physiological functions, viz., circulation, respiration, and innervation :

1. On the circulation. Alcohol in the stomach causes increased influx of blood to the face and integuments, and all the vascular surface supplied by the branches of the ophthalmic artery. This is indicated by the flush and color of the face. This artery is the first branch of the carotid, after its passage into the cranium, and indicates clearly the condition of the circulatory system within the brain.

The heart's action is increased, and the arterial capillaries are dilated with the increased number of red corpuscles. When continued doses of alcohol are given, the engorgement and dilatation continue, the larger trunks of the veins are involved, and the heart's action diminishes in rapidity but not in volume.

2. In the respiratory system both inspiration and expiration are accelerated coincidently with the increased action of the heart; although there are evidences of imperfect oxidation in the deepening color of the face and turgidity of the venous system.

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[1] Read before the Medical Society of the County of Albany, N. Y., March 25, 1874.

[2] Refer to a paper by Dr. Hays, of Chicago, Ill.

3. Effects of alcohol as an innervator. The sense of burning in the stomach and face may be due to sensory innervation, or to change resulting from increased amount of oxygen carried by the red corpuscles to the terminations of the sensory nerves. Vaso-motor activity is diminished, as seen in the dilatation of the arteries. The functional power of the cerebral hemispheres is impaired, as seen in the weakened will and insubordination of the emotional centres, and those of special sensation; causing impressions to be confused, inaccurate, and unreliable. Muscular motions are irregular and incoördinate, and general innervation is reduced to its lowest expression. The functional energy of the superior ganglia of the nervous system is diminished gradually to merely a negative existence. This comprises, in brief, some of the more prominent symptoms induced by alcohol.

The physiological significance of these symptoms is apparent when we consider the engorgement of blood in the arteries and capillaries, occurring from dilatation of these vessels, and from the relaxation of its muscular walls. The calibre of blood-vessels is regulated by the amount of nervous irritability; hence dilatation of their calibre is simply a withdrawal of their nerve-force, or, in other words, vaso-motor paralysis. The pulsations of the heart are increased in number, the result of interruption of the nervous influence of the pneumogastric nerve on that organ causing increased rapidity of action.

Coincidently with this, respiration is increased, and more blood is thrown into the lungs. The arterial circulation increased, involves the venous plexus, and the lungs are taxed to their utmost to accommodate themselves to this condition. This rapid oxidation causes disturbance of coördination between respiration and circulation.

Here the active cause is partial arrest in the innervation of the pneumogastric nerve, resulting in acceleration and retardation of the respiratory movements, with engorgement of the pulmonary vessels, also diminishing the exhalations of carbonic acid, which amounts to twenty-five per cent. in many cases, after a small quantity of alcohol is taken.

The hyperæmic condition of the ophthalmic artery is inferentially the same in the brain. This is confirmed by the intellectual aberration of the inebriate. When the medulla becomes affected, the organs of special sensation are involved, and their functional activity is suspended.

These are prominent factors, pointing to paralysis as the essential lesion.

Dr. Hays, of Chicago, remarks: "Whether we consider the dilatation of arteries, the increased supply of blood, the escape of the heart from its normal control, diminished volitional energy, the distorted intellection, irrepressible emotional activity, diminished special sensibility, suppression of pulmonary exhalation and glandular secretion, loss of common sensation and motor power, separately or together, it will be apparent that each one points back to its ultimate factor, vasomotor paralysis, and diminished nerve-power."

These are some of the physiological hints of the effect of alcohol on the system:

Inebriety, or methomania (an irresistible desire to drink), is pathologically considered a disease, having all the characteristics, such as cause, beginning, development, climax, decline, and extinction, and is also amenable to treatment and cure, as are other lesions of health.

This disease arises from some disorder in certain brain-districts which preside over and direct the process of nutrition.[1] Prof. Rind long ago referred the seat of abnormal sensations in alcoholism to the brain, and not to the stomach or pneumogastric nerve. This opinion was based on the fact that sensations of hunger and thirst continued long after the nerves which conveyed these impressions had been severed.

Animals upon which this experiment had been tried partook of food with eagerness. The effect of such a diversion on the stomach is found to often cause nausea and regurgitation of food, and other disturbances in digestion, indicating that functional derangements of the pneumogastric nerve would also have much to do in creating morbid appetites.

Recent physiological investigations have given additional significance to some of the hints of Gall and Spurzheim that the brain is divided into certain districts which take special cognizance of certain functions of organic life.

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[1] *See* papers by Dr. Burr, of Binghamton.

If the tastes and nutritive functions are coördinated by certain brain-districts, we may not unreasonably expect in the future, by special study of the disorder of inebriety, to know its location, and the facts of its aberrations, as we have learned of the organ of language by the study of aphasia. The processes of nutrition are intricate and varied, requiring a presiding power to regulate its operations, and determine the quality and quantity of food needed. In the normal state this faculty is a source of pleasurable excitement, in which the whole system participates; but, when diseased, unnatural, inordinate cravings are developed, more food and drink are taken than required, the quantity and quality are ignored, molecular changes begin in the nerve-substance, and perversions and aversions of normal nerve-functions are induced; changes of tissue follow beyond the power of analysis to determine. The paralyzing effect of alcohol on the system may be seen at once in the disorder of this brain-district; or the previously-disturbed functions of this faculty may develop in alcoholism.

Inebriety has been noticed to arise from injuries of the brain, protracted hæmorrhage, sunstroke, sudden and violent mental disturbances, etc. What these perversions of the nutritive functions may be which create a desire for that which the reason condemns, are questions for the future physiologist. An alcoholic diathesis or tendency to inebriation is a well-recognized fact, and this condition is transmitted as other diseases are.

Dr. Darwin wrote, half a century ago, "It is remarkable that all diseases arising from drinking spirituous liquors are liable to become hereditary even to the third or fourth generation, gradually increasing, if the cause be continued, until the family become extinct." Plutarch wrote, "Drunkards beget drunkards;" and many other writers, of both ancient and modern times, have mentioned this fact.

This disease may not develop until maturity, and not unfrequently it passes over one or two generations, and appears again in the same intensity. Often it is foreshadowed in the indecision of character, weakened will-power, nervous irritability, tendency to convulsions or epilepsy from slight causes, or in a morbid, capricious appetite, or extravagant, unnatural tastes. Such people possess this diathesis, and their entire organization indicates inebriety. It is sometimes called a tubercular diathesis, because, if it does not break out in inebriety, it may develop into tuberculosis.

Inebriety is frequently allied with insanity, and both may appear in different members of the same family, and apparently from the same constitutional causes.

This diathesis may be seen in children from the cradle up, and in some instances infants have been noticed to cry for liquor, and to be satisfied only when they secured it. Passions, habits brought on by company, indiscriminate discipline or lack of discipline of impetuous children, may develop alcoholism.

Inebriety may be accidental. A man with a healthy, normal brain may use alcohol, at the suggestion of a friend, to keep off some disease to which he is exposed, and the damage done to the nerve-cells and nutritive functions may be permanent, disorganizing sensation and rapidly developing into violent acute alcoholism.

Inebriety may be social, and depend upon temptation and peculiar organization. A prominent politician, often in this city, is temperate at home, but when abroad is an inveterate drinker. Here the diseased craving is under the control of the mind.

Inebriety is largely under the control of the will. The general statement is often made that a weakened will-power is the predisposing cause of this disease. This is only true in part. When this malady is not inherited, the will may resist the temptation to use alcohol, but an inherited craving for drink cannot be controlled. Exposure to the sun's rays will in certain conditions of the body produce sunstroke, and leave the patient ever after predisposed to other attacks from less active exciting causes. In like manner, inebriety may be provoked in certain physical conditions by a single glass of liquor, predisposing the system to the chronic disease, breaking up normal functions, or awakening latent tendencies, which grow and develop until the disease manifests itself like an attack of malaria.

Inebriety is the active or latent cause of a large percentage of cases of insanity and many other diseases of the brain. The daily experience of every physician confirms this, and statistics of lunatic asylums, of health boards, and commissioners of charity, all furnish proof beyond contradiction. The records of autopsies, when the habits of the subjects are unknown, tell this history in the organic changes which cannot be mistaken.

A recapitulation of what we have said will indicate that—

1. Alcohol diminishes and destroys nerve-force, tending to develop paralysis of motor and functional activity.

2. Inebriety is a disease of certain parts of the brain, and of the nutritive functions which it controls.

3. That this disease is provoked by alcohol in variable quantity, depending upon some unknown condition of the body at the time of exposure.

4. That a weakened will-power, and mental aberration, and tendency to inebriety, not inherited, are manifestations of disturbance of the coördinating power of the nutritive function.

5. This disease is inherited, and exists as an alcoholic diathesis, which may spring into activity, remain latent, or develop into other irregularities and functional diseases.

6. Inebriety is the active cause of many of the nervous and functional diseases of the brain.

It will be apparent to all, in speaking of the treatment of this disease, that we have no remedy or specific known to the profession which can restore the peculiar molecular changes which destroy the integrity of brain-functions.

If the alcoholic diathesis is present, we may control it in a measure by removing the exciting causes.

If this diathesis is not present, we may prevent the increase of the disease by changing the habits and removing the active causes.

The general treatment of this disease may be defined under two heads, *reparative* and *restorative.* The reparative lessens the intensity of the disease, and enables the patient to partially recover. The least hopeful classes are periodic drinkers; they are subject to paroxysms similar to that those caused by malarious poisons, when they seem to abandon all effort at restraint; after the attack they make desperate and apparently successful efforts to save themselves, but fall again as before.

For this class the asylum is the best place, where they may be built up and sustained during the paroxysm, and made stronger, physically and morally, to resist the recurrence of attack.

This class comprises over forty per cent. of all drunkards.

It is asserted that there are over one hundred thousand inebriates in the United States who are periodic drinkers, and who are practically non-producers, growing worse every year. Under proper medical treatment at an asylum the extent and degree of these attacks may be so far lessened or broken up as to enable many of these men to regain their places in society and business.

To illustrate: J. B., a business-man in this city, was forced to retire from active life by these recurring attacks. He was sent to an asylum, and by judicious treatment and hygienic care so far recovered that he is now conducting business with honor and success, although not free entirely from the disease. Another gentleman, in the frenzy of the attack, attempted violence to his family, and was considered dangerous. He lost his place in business and society. A year at a private retreat restored his moral and physical control, so that he is now a useful member of society. These cases show that reparative treatment, which enables the inebriate to retain his position in society, is worthy of the highest consideration.

The restorative treatment renews the former health of the patient, and sends him out again in the world cured, in the same broad sense in which a man having had pleurisy or pneumonia is restored to his previous health.

The reparative treatment is illustrated in a cure of rheumatism when the attack is broken up for the present. The restorative treatment is seen in a case of fever when all the symptoms subside, and a return to health is complete and lasting.

All treatment must therefore resolve itself under these divisions. To accomplish either of these results you must have special surroundings and conveniences, such as can be found in but few private families. Hospitals and asylums built for the special purpose of treating inebriates remove the exciting cause, viz., alcoholism, which is of the first importance in the treatment of the disease. 2. They enable the patient to isolate himself from all excitement, and give opportunity for complete rest of the nervous system, giving Nature better facilities to carry on the restorative process. 3. They remove all care and responsibility from the patient's mind, except that of recovering his lost health, and make him a party with the physician in bringing about this result. The latter is in itself a powerful factor in the treatment of any disease. 4. Hospitals and asylums give the medical attendants complete control of the habits and surroundings of the patients. With these important and essential aids the treatment of inebriety is a practical reality, and is becoming a necessity in every community. The victim of this disease has always a weakened physical system. The many functions and organs of the body have become poisoned and impaired; the mental and moral forces, sympathizing with the diseased organism, lose control, and sink to a level with the depraved and morbid appetites. Alcohol has paralyzed the functional organs, broken down the normal molecular nerve-structure, perverted the healthy co-ordination of nutritive force, and, in a greater or less degree, begun a process of disorganization, ending in death, unless checked. The treatment, therefore, must have reference to removing this cause and building up the general system.

Unlike insane patients, the inebriate can reason on all other subjects, and generally enters upon the treatment voluntarily. When in the asylum he is surrounded with books, music, and amusements, which are designed to arouse his moral nature. His companions, suffering from a like trouble, are some of them recovering, while others have just entered, and all of them can justly appreciate every want of his feeble will.

The surroundings should be pleasant, and the table supplied with food suited to the patient's condition. If he is reduced, iron, quinine, and strychnia, or phosphorus, with vegetable tonics, are given. If dyspeptic, a plan is pursued having reference to the general rather than to any local symptoms. A warm or cold bath is taken daily, or a shower-bath if necessary.

If the patient is in a condition to go out, an attendant is provided (generally a convalescing patient), who accompanies him. He is kept under constant care until he shows enough strength of purpose to be left alone. Every thing that is introduced is calculated to divert his mind from his morbid appetite. He is permitted to exercise in the open air and to employ his mind and body in any way he may fancy, as in surveying, playing ball or billiards, gardening, scientific pursuits, or any thing that will not take him away from the establishment.

This is the general plan of treatment which is designed to build up the moral and physical forces.

The public treatment of the inebriate, in both plan and spirit, is radically wrong. The cruelty to the insane of a century ago is repeated in the poor outcast drunkard of to-day. All of our cities and larger villages have police courts, three-fourths of the business of which is to administer fines and punishments to poor, diseased inebriates, who are broken down mentally and physically. The idea of true reformation never reaches this system; it is a prosecution of men who are not criminals, but sick patients needing medical and moral treatment. By such efforts to rid ourselves of this class, we substantially ruin them forever. The extent of this mistake is apparent in the statistics of the Albany penitentiary for the past twenty-three years, where 24,602 persons have been committed for crime; of this number 21,057 were inebriates. If these men had been treated in asylums, a large percentage might have been cured, and become useful and honored citizens. But by this harsh treatment they have been excluded from the very doors of moral and physical health, and their ruin made more certain and fixed. The insane, blind, and idiotic, are cared for in asylums, but the outcast drunkard is held to strict accountability—a degree of ignorance which future generations will regard with amazement. The time is coming when we shall care for this class as we do for the insane and idiotic. Then pauperism and crime will be lessened and the business of our courts diminish. At the close of a noted trial in this city, an important order was issued containing this sentence, "which inability does not appear to have arisen from causes beyond his control," etc. Had inebriety been understood, this sentence would never have been written, and the poor inebriate, now to be tried for this impropriety, would not have been held responsible. Had his case been understood on the first manifestations of the disease, he would have been put under medical control, and his reputation and the cause of his client would not have suffered. . . . The number of inebriate asylums in the United States is eight, and the inmates number over sixteen hundred. This is but the advanced guard of the great army of five hundred thousand inebriates in this country who are pressing forward toward the fountains of health, which science is opening slowly but surely. The results of treatment in these asylums are equal to those of the best insane asylums, varying from forty to fifty per cent. of all the patients who are treated. At Binghamton over forty per cent. have gone away and remained cured for three years, as long as any record has been kept of them. At other asylums the cures have been fully equal. The time of treatment averages from ninety to one hundred and twenty days. Many cases are incurable, but all may be improved at the asylum, though, when away, they may relapse as before into temptation. The proportion of patients discharged cured is equal to that of the best insane asylums, and more than fulfills the predictions of Dr. Dalrymple (chairman of the Select Committee of the British House of Commons, to inquire into the best plan to care for inebriates), who says "no disease of any magnitude promises such excellent results from medical treatment as that of inebriation. I think it possible that ninety per cent. may be curable in the future."

It is a source of much pride to know that at Binghamton is one of the most complete asylums for inebriates in existence. The problem of its success has been settled, and our State is foremost in this new field of progress.

The conclusions from these facts are: 1. As medical men, in daily contact with this disease, we should seek to know its practical indications and general methods of treatment. 2. We have evidence that inebriety can be cured as successfully as any other nerve-disorder. 3. Alcoholism, as a disease and as a cause of organic lesions, is increasing and spreading through all classes of society. 4. The public look to physicians for relief and instruction, and the problem of the cure and prevention of alcoholism must be worked out by the medical profession.

Art. III.—*Chronic Vaso-motor Hyper-irritation.* By Allan McLane Hamilton, M. D., New York.

My attention was called a year or more ago to a condition which at that time seemed to merit the distinction of being considered as a separate disease, but, as I had not then heard of other cases, and had not met them myself, I thought it to be only a peculiar symptom of some undiscoverable central disease. Having seen a case since, however, and heard of another from a member of my class, I have deemed it of sufficient importance to present a description of the condition, which I now think may be considered as a distinct nervous affection of itself, having a definite character, with uniform symptoms.

The affection I allude to is a temporary spasm of the muscular coats of the small vessels of some limited spot, the site being usually a part of the hand. It is indicated by loss of normal color and decrease in temperature. The peculiarity is the limited blanching and coldness coming on without assignable cause, lasting a few hours or a few days, and finally subsiding, to reappear perhaps after an uncertain interval. Of the two patients I saw, the right hand of one and the left of the other were affected.

In these cases, for the space of a week there was a contraction of the cutaneous blood-vessels of the skin of the two outer fingers of the left hand, extending down to the wrist, and clearly dividing them from the normal skin by a sharp contrast of color. In the other case the color would disappear for a few hours at a time, these attacks coming on every few weeks. There was no loss of motion or sensation in the affected fingers. Appreciation of weight was perfect, and tactile sensibility was not impaired in the least. The æsthesiometer did not indicate any loss of sensation, the patient being able to distinguish the points at a normal distance. The galvanic current effected a disappearance of the condition in a short time. As to the cause of the disease, I am in the dark, for no history that could possibly account for it could be given.

There is a well-known physiological fact, viz., that a section of a sympathetic fibre will be followed by dilatation of the vessel it supplies, attended by congestion of the part; and that irritation of the same nerve-fibre will be succeeded by contraction of the vessels.

According to Virchow, and other writers, there are two sets of nerves concerned in circulation—a cerebro-spinal, or *moderator*, and a sympathetic vaso-motor; the former in a normal state affecting dilatation, and the sympathetic, causing contraction, so that, when the influence of one or the other is destroyed, the one left acts alone and performs its special functions with increased vigor.

As none of the peculiar motor or sensor functions belonging to the cerebro-spinal system were impaired or lost, I am of opinion that the integrity of the peripheral branches of this system was intact. The process of bleaching was not under control of the will, as in Dr. Clymer's case, which I shall presently allude to, but was involuntary. I am therefore left to suppose that the vaso-motor nerves were affected, and that there was a hyper-irritation starting either from some ganglion, or dependent upon a localized stimulation of the sympathetic fibres going to the blood-vessels of the part.

Dr. Meredith Clymer, in the *Medical Record*, vol. v., p. 148, details a case coming under his notice where the patient, by the exercise of his will, could produce at pleasure a blanching of the entire cutaneous surface, erection of the hairs, *cutis anserina*, with loss of heat. After the effort he felt a peculiarly disagreeable sensation at the præcordial region, akin to the sensation produced by fear, and an indescribable sensation, or aura, starting from the upper cervical region, and traveling downward.

I have seen a condition the exact reverse of that I have just described. The patient was choretic. The right hand became a dusky purple, and staid in this condition for two or more weeks.

In conclusion, I would recapitulate the several points of interest in these cases:

1. A local blanching lasting two or three weeks, or coming on in intervals of several weeks, and lasting a few hours each time.
2. Sensation and motion unimpaired.

3. Temperature of affected members lowered.
4. Part affected, the hand.
5. The affection due to hyper-irritation of local sympathetic vaso-motor filaments.
6. Galvanism effects a change in the calibre of the vessels, and eventually a cure.

Art. IV.—*Iron for the Cure of Erysipelas.* By Julian J. Chisolm, M. D., Professor of Eye and Ear Diseases in the University of Maryland, and Surgeon in charge of the Baltimore Eye and Ear Institute.

Erysipelas was formerly a very fatal disease, and was with truth considered the scourge of hospitals. Under judicious medication it has become the most amenable to treatment of all the serious diseases. In my early professional life, the announcement of erysipelatous complications in a case of surgery was received with consternation. The fright was well founded, for this spreading inflammation always foreboded serious trouble, and in many cases a fatal issue. Now we have such confidence in controlling this disease, that erysipelas has lost its terror. We cannot believe that this most desirable result is attributable to change of type, but that, on the contrary, the improvement depends solely upon a more rational treatment.

As long as erysipelas was considered typical of acute sthenic inflammation, to be combated by the only recognized remedies of a former practice—bleeding, mercury, and starvation—death often made its visit a few days after the inauguration of this heroic treatment. The disease was bad, but the treatment was frightful. When in modern medicine an enlightened pathology exhibits erysipelas as a depressing complication to be corrected by a supporting and stimulating medication, the results of treatment have become so satisfactory that we have ceased to consider this as one of the fatal diseases.

Believing the glossy, red, diffusing swelling to be only the local manifestation of a constitutional disorder, I have for many years restricted the treatment of erysipelas to internal remedies, ignoring, as far as medication is considered, the local condition. Experience has taught me to place every confidence in the use of iron, as nearly antidotal to erysipelatous poisoning. I administer in all cases the tincture of the muriate of iron, as soon as the complication is diagnosed. Formerly I thought it necessary to prepare the system for the administration of the iron, by first giving a mercurial purge. For the past fifteen years I have disregarded this preparation, using the tincture of iron alone from the beginning to the end of the treatment. The dose of the iron is from half a drachm to a drachm every four hours. With such doses I have often cut short what threatened to be a serious attack of traumatic erysipelas in forty-eight hours. The idiopathic variety will also yield promptly to this treatment, with scarcely an exception.

The following case illustrates the established treatment, and the corresponding result:

J. K., aged sixty, was admitted to the Baltimore Eye and Ear Infirmary for surgical treatment. He was the subject of a keloid growth, which, in an ulcerated condition, involved the entire lower lid, and also two-thirds of the upper one. The upper lid was replaced from the skin of the forehead, and six weeks later the lower lid was manufactured from the cheek, the tongue of skin being retained in its new position by sundry points of suture.

In accordance with my habit in operating upon the eyelids, the wounds made received no after-dressing, but, on the contrary, were left purposely naked, so that they could be readily inspected. The little sanious fluid from the edges of the cut surfaces in a few hours became desiccated into linear scabs, under which protection the healing process would speedily take place. For thirty-six hours the case progressed well. Then the newly-cut surfaces took on erysipelatous inflammation, which rapidly involved the cheek and side of the face, threatening the destruction of the flap. At my daily visit I observed the change which had taken place since the previous day. The large surface of red, glossy swelling indicated the headway which the erysipelas had already made. The tincture of the muriate of iron, in drachm-doses every four hours, was ordered without delay, with liberal diet, and whiskey. No local applications were used. Within twenty-four hours a marked subsidence in the swelling was visible. In forty-eight hours the erysipelas had disappeared, so that the union of the flap to the contiguous surface by the first intention was secured.

The above case exhibits my average experience in controlling erysipelas by the administration of large doses of iron. In only one or two instances out of a large number of cases have I found the disease rebellious to this antidotal remedy.

ART. V.—*The Causes and Prevention of Disease.* By WALTER R. BARTLETT, M. D., New Haven, Conn.

AWAY back in the earth's early history we read of a golden spot, in a rich Oriental land, called Eden. It was named a garden, for there flourished the varied forms and products of Nature in absolute perfection. There, too, dwelt a man and woman, doubtless the most perfect of any that have ever lived upon any spot of earth; for a time they knew not sickness, or pain, or any physical ill, to cloud the pathway of a blissful life; and language and poetry, and the sculptor's chisel, have vied with one another to tell of the noble physical development of the first man and the full, completed figure of his mate. Since then, poets have wandered into a realm where perfect health has reigned; from many a sick-bed, pale, glassy eyes have looked out into such a land and cried for deliverance, or turned with reproachful, sometimes bitter words, to him who has stood as the best earthly guide to such a place. But in the highest and loftiest and most earnest sense does the pure-minded physician seek after this banishment of disease which the poet's song cannot lure away, or sick one's pleading looks move to pity. This, then, is the subject to which I would call attention—the causes and prevention of disease.

First, how can we prevent disease? The answer in general terms is easy: Find out the prime cause and cut it off. If disease has become established, destroy those means by which it is kept in existence. In regard to the first point, I will say at once that we have no data at the present time from which we can reason out any code of rules which, if followed, will absolutely prevent disease so far as means directed to the body are concerned; that is, our knowledge of the physiological laws of the organism will not enable us to reach that high point. So this is not the line of thought I propose to follow out, for every medical man is familiar with those general preventives which accord with the fixed and known laws of physiology. I propose to consider the causes which rule outside the body, which diffuse themselves now in fearful epidemics, making us stand aghast and terror-stricken, and again steal upon us in the form of some wasting disease, like consumption. We will consider the external causes of disease under the following heads:

1. Those which reside in the atmosphere, and are generated from various substances in Nature.

2. Those which arise from our social relations and customs.

And, first, that the air is in some way the conveyer of the seeds of disease there is no doubt, but as to their forms and properties we as yet are unsettled. In regard to some diseases we entertain more definite ideas as to this method of conveyance than of others. Take as an instance cholera—it is very easy to trace an intimate connection between it and decaying animal or vegetable matter; or, again, to ascribe intermittent fever to some local cause, as the upturning of soil, or the drawing off of a pond of standing water. But it is a different matter with many diseases: thus it is with consumption; true, we can say, and with propriety, that it depends to a certain degree on the greater or less humidity of the atmosphere, but to the ordinary conception the gap between cause and effect is widened. We cannot see so close a relation between dampness of the air and disease as we can between decaying vegetable matter and the same. Let us go a step further and look at asthma. Whatever the prime cause may be, we know that the atmosphere is so related to it as to produce it, or cause it to cease, according to location, and that the rule is not fixed, the most opposite effects being produced upon different subjects in a given locality. Scarlet fever and diphtheria illustrate the same rule—where does their poison reside, and how is it conveyed? Here we can see no visible excitant of disease; we detect odor, but there is nothing that the mind can put into definite, tangible shape; that the air must transmit something we do not doubt; but what? That is the question. Let us draw a parallel. A dozen men are found dead upon the battle-field, riddled with rifle-bullets; another twelve without a shot-mark upon them, but battered and bruised. Now, in an instant we note the connection in the first case, but in the second it is far different; it was violence, but in what particular way manifested is not so apparent. Is there, then, a special first cause for all the different diseases? And does the air swarm with these germs, many hued and shaped, like a myriad host of insects, or does it steal up, an impalpable emanation, like some attenuated gas, diffusing itself far and wide, borne hither and yonder by the winds? There are two recognized theories, the vapor and the germ, both dependent upon local causes for their derivation. A very plausible theory, and one based apparently on sound reason, supports the idea that foul gases are intimately connected with epidemic diseases, not so much in themselves as that from which they are derived, namely, decay and filth. To these we are in the habit of attributing in a very great degree varied forms of epidemic disease.

We deem it of the highest importance to cleanse our streets and disinfect our cesspools. We read in them pestilence and the grim agents of death. But, looking at the matter a little more closely and in a strictly causative sense, can we regard them as more than accessories, and are they not just as incapable of themselves of producing cholera as hydrogen without its due proportion of oxygen would be of producing water, for have we not seen yellow fever or cholera keep steadily on, in spite of all our scraping of dirt, and washing with water, and sprinkling of disinfectants by the cart-load? During the late ravages of yellow fever in Shreveport, and cholera in Memphis, was not this abundantly shown? No sanitary means could stop its career; right on it held its way, until the chill frost blighted and paralyzed it. The carcasses festering in the sun along the river-bank at Shreveport could not be regarded as more than accessories, as the first case of yellow fever was brought from New Orleans, and then the death-work began. About the same time four cases of cholera arrived in New York, according to the statement of Dr. Vanderpoel, yet no spread of the disease followed, showing that it required another element to light it up. Dr. White, reporting for the New Orleans Board of Health, before the last meeting of the American Public Health Association, gave it as his opinion that the causes of cholera in that place were "the lack of sanitary preparation on the part of the authorities, and the outrageous condition of the streets." Dr. McLellan, reporting for Kentucky, says, "These cases were confined mostly to foreigners and negroes, and to localities where dampness and filth predominated." Dr. J. H. Van Deman, Health-Officer of Chattanooga, said of its occurrence there, "It became epidemic soon after its appearance, and seemed to take its rise in marshy and low portions of the country, afterward extending to other localities, especially where limestone formations prevailed."

Looking at these statements closely, we see that these gentlemen attribute the disease to these commonly-accepted causes, filth and decaying vegetable matter; but may they not have mistaken the abettor for the causer? If they are right, why did not the enforcement of sanitary measures put a stop to the disease, for, if the causes were removed, surely the disease would have died. And again, if filth is in itself such a direct producer of cholera, why do we not see it in every place where it abounds, if not as an epidemic then sporadically? New York is in some parts as noisome and dirty as any city in the Union: why did it not appear there? Perhaps the reply is, It did, here and there a case; but do not isolated cases occur in the country as severe as those of the city, thus showing that there must be some other cause than those above named? It all amounts to this, that with certain added causes dirt and decay will accelerate an epidemic of cholera, but without them they are not capable of producing it. Pure air and pure water are invaluable as promoters of good health, but that impure air and water can be the sole or even chief cause of cholera, or of any other epidemic disease, I do not believe. What, then, is the prime factor in the production of epidemic disease? I believe the explanation is this: they all arise from one first cause, that is, a permanent constituent of the atmosphere. It has its congenial haunts, but may be disseminated in varying proportions throughout the whole by the wind-currents and the laws of diffusion. The different forms of disease, as for instance yellow fever, cholera, scarlet fever, typhoid fever, small-pox, and measles, are but the varied combinations of this one prime factor, with other existing visible causes in Nature. It is, I believe, in harmony with the *doctrine of the correlation of forces*, governed by the same grand law. The products—sound, electricity, heat, and light—all revert to one first cause, vibratory motion; this being understood, the problem is elucidated, and a beautiful harmony runs through the whole. So in disease, we will call this first principle a gas; for I believe it to be impalpable, and yet as real as oxygen or hydrogen; this comes in contact, it may be, with decaying animal or vegetable matter at a certain temperature, and yellow fever is evolved. Again, in another locality, at another degree of temperature, and cholera springs forth. Again, a pond of standing water may be drawn away or soil upturned, and then we have intermittent fever. So, too, with scarlatina and variola; unite the prime factor with others, and then come these diseases. We may illustrate by means of ordinary coal-gas: confine it in a gasometer unmixed with air, and insert a lighted match, the flame will immediately expire; but let the gas escape, and then apply the match, and the result is combustion. Now, this prime factor which we have spoken of above is one part, the air the receptacle, the various local causes the match, and the human body the part consumed. Let this gas be kept at a given temperature, and epidemic disease is not evolved; go above or below, and we have them in their gradations. The disease once developed, a new supply of material is evolved and new fury added in the same way as in ordinary combustion; the flame seizes hold upon that which is incombustible. There is no such thing as chance in this whole matter, but running through all a symmetry and beauty as manifest as in other departments of Nature. The locked-up torrent, let loose in spring, to rush down the mountain-side and lay waste the fair country at its base—the fierce simoom that bursts in awful fury on the heated air of the tropics—are governed by a law no more fixed and inflexible than that causing disease. A chance exposure cannot plant the seed that grows in the flush of hectic, nor a mere circumstance transform in an hour the freshness of vigorous life to the white and wrinkled aspect of age. Will this law apply to the other classes of disease? The answer is, that from the same ultimate first cause are derived all the other diseases, though the form they assume is to a greater extent due to causes referable to the body itself. This, at first, may appear to be a wild statement; but yet, looking a little more closely, we see that it is in consonance with the view enunciated. The same basis substance in chemistry united with other factors produces results the most varied; one atom will place the product either in the class of inert substances or that of deadly poisons, according to its arrangement. Sound and heat bear no apparent relation to one another, but both depend upon a slight change in the method and rate of vibratory motion. Consumption seems very far removed from cholera; but may not the same basis, united with decaying vegetable products, give on the one hand cholera, or, combined with a vitiated principle of nutrition, on the other, cause consumption? There are some localities where tetanus, a comparatively rare form of disease, seems to follow almost as a matter of course upon wounds, thus showing that it is due to something else than mere injury of nerve-fibre; the outside element must first be added, and then the chain is complete. In particular localities this abounds; there is its lurking-place: in other places it is more rare and more attenuated, so the disease is not generated. Cerebro-spinal meningitis illustrates the same thing; and so we might go on through the whole list of individual diseases, and find in them this prime factor in the minority only, occupying an inferior position and outweighed by causes residing wholly within the system. To this minor class I would refer such diseases as insanity and the ordinary forms of brain-disease. Syphilis and gonorrhœa I would also ascribe to a poison peculiar to themselves.

We will now consider briefly the second and more apparent general division of external causes, namely, those which arise from our social relations. Connected with this are many of the internal causes; in short, that whole division is but subsidiary to the social cause just named. Classed here we have all the violations of Nature's grand laws, the use of improper food and water, excess in eating and drinking, the diseases of heredity dependent upon improper marital relations, the sins of immorality. All these may be obviated by attention to the plain and well-grounded teachings of physiology, directed to the body itself. But there is another subdivision which is purely external; here we find the influence of overcrowding in tenements, damp and dingy, removed from sunlight and the pure, wholesome air. Again, the influence of non-acclimation, which operates so detrimentally upon our foreign population, or even upon natives of our clime removing to different parts of the land; and, again, the baneful effects of some of our grand social systems referable to improper methods of dress and defective educational systems. Now, what is the application? Scientific men, laboring in the field of medical chemistry, should strive to study the properties and habits of this proximate principle of disease, basing their application upon the simple and harmonious law of the *correlation of forces;* this once done, disease would feel its death-blow; the master-spirit disarmed, the strong hand of the foe would fall paralyzed. What vaccination is to one of his direful developments, this would be to all human ills. What that identical essence of disease is I cannot now state by name. It may be connected with the presence or absence of that form of oxygen called ozone, or its associate antozone. Dr. Beard, in his paper on atmospheric electricity and ozone, has set out on the right track, showing as he did how tides of electricity flow regularly through the air morning and evening, generating ozone, and also how this gas affects nervous diseases, and is supposed to be connected with rheumatism and intermittent fever, and with the various eruptive and cutaneous diseases, causing their increase when in excess, and the prevalence of rheumatism when deficient; that visitations of cholera are accompanied with diminution of ozone; and that, if regular systematic observations were made, under the patronage of the Government, we should probably be able to answer many important questions in disease. We have busied ourselves so much in attending to the subsidiary causes, that we have devoted too little study to the one grand element that is higher than all. Go back in the past, and look at the air from that dim, unreal perception of its properties and composition, and then turn to the present, with the problem so nearly elucidated through the genius of Priestley or Lavoisier, and say if you can that the process shall go no further, and this subtile property never be analyzed.

Art. VI.—*A New Method of applying Plaster of Paris for Fracture of the Bones of the Leg.* By G. Wackerhagen, M. D., Surgeon to the Southern Dispensary of Brooklyn.

As I have experienced considerable difficulty in removing plaster-of-Paris dressings when applied by the roller bandage, and especially when obliged to remove them on account of pain caused by an increase of the swelling, I respectfully submit to the profession a method of application by which these disadvantages may be avoided:

Having procured a woolen or cotton stocking sufficiently long to reach to the knee-joint, I cut from it, as a pattern, six layers of coarse red flannel (Fig. 1), (one-quarter of an inch larger to allow for shrinkage). The flannel is then soaked in water, pressed, and laid over the back of a chair ready for use. A one-quarter-inch cotton rope is now sewed to the posterior median line of the stocking. The plaster of Paris being in process of preparation, the stocking is cut in the anterior median line, applied to the fractured limb, and laced up in front, including the rope (Fig. 2), extension and counter-extension being kept up by assistants, and the fracture adjusted.

Each layer of the flannel is now separately saturated in the plaster paste, and applied, three layers to each side of the limb, being careful to avoid covering the rope. After this is done, a layer of plaster paste is applied to the flannel, and, when this has become sufficiently dry, a coating of shellac varnish is applied, which produces an elegant finish, and also gives firmness to the splints. The varnish will dry in about fifteen minutes.

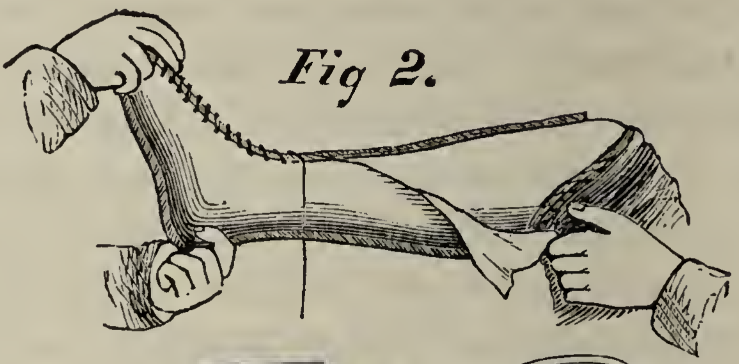

Fig 2.

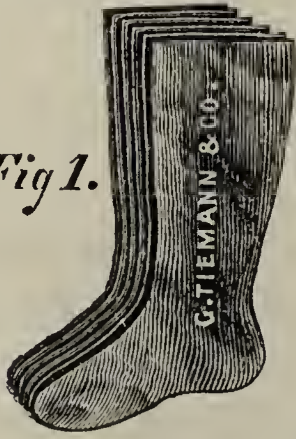

Fig 1.

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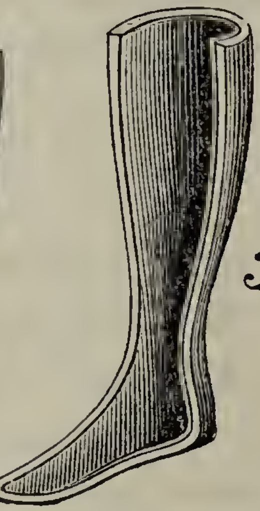

3.

This dressing can be removed in from three to five minutes, by loosening the rope from the plaster and cutting the thread which binds it to the stocking. The rope having been removed, the plain stocking surface can be cut through with an ordinary pair of scissors. The splint is then removed in two lateral portions, each half of the stocking remaining attached to its corresponding splint (Fig. 3).

ART. VII.—*A Comparison of the Results of Treatment of Three Hundred and Eight Cases of Fracture of the Thigh, under the Care of the Visiting-Surgeons of Bellevue Hospital, from* 1865 *to* 1873 *inclusive.* By FREDERICK E. HYDE, M. D., New York.

THE following table I have compiled, by request of Dr. Frank H. Hamilton, from the results of an examination of the records of Bellevue Hospital (made with the assistance of Mr. Richard Vansantvoord and Mr. Benjamin T. Mouser, students of medicine in the office of Dr. Hamilton), for the years 1865 to 1873 inclusive; including all the cases of fracture of the thigh that can be found upon the records for the period mentioned. Malgaigne is the only one, as far as I know, who has analyzed an equal number of cases of fracture of this bone, his statistics showing exactly the same number, three hundred and eight, but extending over eleven years.

A Comparison of the Results of Treatment of Three Hundred and Eight (308) *Cases of Fracture of the Thigh, under the Care of the Visiting-Surgeons of Bellevue Hospital from* 1865 *to* 1873 *inclusive.*

Surgeon.	Total number of cases from 1865 to 1873 inclusive.	No. of cases in which result as to length is not mentioned.	No. of cases without shortening.	No. in which shortening occurred.	Average shortening, excluding perfect cases, in eighths of an inch.		Average shortening, including perfect cases, in eighths of an inch.	
					eighths.	inch.	eighths.	inch.
Dr. A.	33	22	3	9	6.2 or about	¾	4.6 or about	⅝
Dr. B.	30	21	2	7	5.7 “	¾	4.4 “	½
Dr. C.	10	8	1	1	4.0 “	½	2,0 “	¼
Dr. D.	33	19	3	11	4.5 “	⅝	3.5 “	½
Dr. E.	13	10	1	2	3.5 “	½	2.3 “	¼
Dr. F.	27	21	..	6	3.5 “	½	3.5 “	½
Dr. G.	9	4	1	4	12.2 “	1½	9.8 “	1¼
Dr. H.	25	16	1	8	7.0 “	⅞	6.3 “	¾
Dr. I.	17	12	3	2	6.0 “	¾	2.4 “	¼
Unknown.	111	64	4	42	4.8 “	⅝	4.4 “	½
Total & gen. av.	308	197	19	92	5.7 or about	¾	4.3 or about	½

The surgeons in charge during this time were Drs. Crane, Gouley, Hamilton, Markoe, Mott, Sands, Sayre, Smith, and Wood. This order of the surgeons' names does not correspond with the order of arrangement in the table.

It will be observed that several of the surgeons are accredited with but a small number of cases, as Drs. C., E., and G., giving results above and below the average. This is accounted for by the fact that the name of the visiting-surgeon is not recorded in connection with many of the cases. Such cases I have placed opposite the heading, surgeon unknown.

It will also be noticed that where several surgeons have had about the same number of patients under their care, there is but a shade of difference in the result obtained, this result corresponding with the general average.

From these records we learn that the average shortening of fractures of the thigh, *excluding* cases without shortening, is about three-fourths of an inch (5.7-eighths) and *including* cases without shortening, about one-half an inch (4.3-eighths).

Of the one hundred and eleven cases in which measurements were made, nineteen were without shortening, or a fraction over seventeen per cent. by all methods of treatment. In one hundred and ninety-seven cases, including eight cases of non-union and thirty-five of death, no measurements were recorded.

Below will be found two additional cases of treatment by plaster of Paris, in which gangrene and death occurred, that Dr. Hamilton has requested me to include in my paper, one of which is the additional case promised in the August number of the JOURNAL. They are copied directly from the Bellevue Hospital records.

FRACTURE OF THE FEMUR-SHAFT.

Lizzie Gibbons, aged twenty-four years, house-keeper; admitted May 28, 1873, Ward 30. Has always been a healthy woman, somewhat intemperate, no venereal. Family history good. On the morning of admission, while on a drinking-spree, she fell from a stoop upon the sidewalk, from the lower step of the stoop, as she thinks. After this an officer dragged her to the station-house. Soon after, she was brought to the hospital. On examination, there is a fracture of the femur at the junction of middle and lower thirds. Limb was put up in plaster-splint the same day.

May 29th.—Patient slept somewhat last night and feels comfortable this morning. P. M.—Noticed that the toes looked dark this evening, and the bandage on the foot to the bottom of the splint was taken off, and the lower portion of the splint cut open. The accident was due to tight bandaging of the foot and not to tightness of splint. Electricity to the foot was kept up for some time, and afterward friction, until circulation was completely reëstablished.

30th.—Went to the patient early this morning and found the limb cold, with scarcely any perceptible circulation, and very little if any sensation in that portion from the calf down to the toes. The remainder of the splint was immediately cut open, although there was no point of constriction above the knee, to which point it had been cut open the night before. Friction was immediately applied to cyanosed part, and warm bottles placed about the leg, and a foot-warmer applied to the foot. Galvanic battery was used for two hours. Ordered brandy every half-hour and carbonate of ammonia. Owing to excessive drink the last two days, the patient has shown clear symptoms of delirium tremens. Ordered potass. bromide and chloral hydrate every hour until sleep, and friction to foot. P. M.—Woman is quite delirious; surface all over the body has a cyanotic appearance; circulation in foot appears a very little better.

31*st*.—Patient died this morning at one o'clock.

Autopsy.—Lungs, pneumonia of both; old cheesy nodules of both apices; spleen normal; heart normal; liver fatty; kidneys fatty; stomach and small intestines congested; ulceration of intestines; ovaries, both congested and right ruptured; hæmorrhage into pelvic cavity; thrombi of both iliac veins; emboli of middle cerebral and basilar arteries; brain congested.[1]

FRACTURE OF CERVIX FEMORIS.

Charles Grimm, aged sixty-two years, German, shoemaker; admitted February 2, 1871, Ward 10. Accident the same day. Has had heart-disease since 1844.[2] On the day of admission, fell on ice, his left foot and leg being thrown probably forward. He sustained a fracture of the cervix femoris of same side; he walked a few steps after the accident. On admission his pulse was weak and feeble, also irregular, no murmur; he never had rheumatism, and knows no cause for heart-trouble; as he sits in bed the left leg is everted, leg slightly flexed on the thigh; movement gives much pain, which is referred to the hip and knee. Crepitus is obtained by flexing the thigh on abdomen. The patient is a large, muscular man. A plaster-splint is applied to the leg for the purpose of securing extension.

February 6*th*.—Extension being made by pulleys, and the patient etherized, a plaster-splint is carried up the thigh and around abdomen. The patient rallied well from the anæsthetic, and says the splint gives him much comfort. Is kept in bed.

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[1] Opinions are expressed in connection with the autopsy, as to the probable cause of death, but we prefer to report the facts as they are upon record, and leave the reader to infer the cause of death.

[2] It is to be regretted that the evidence of this fact is not supplied in the notes, or the nature and degree of the disease.

8*th.*—Patient has a large sore on sacrum, extending almost to the loins; splint taken off; extremities cold and blue; pulse felt with difficulty; suffering from some dyspnœa; lungs emphysematous and old fracture (?) somewhere; this P. M. died.

Dr. Hamilton desires further to state that, in the last (fourth) edition of his treatise on "Fractures and Dislocations," he has said, referring to a paper prepared for publication by Dr. J. D. Bryant, "For the accuracy of the statements made in this paper I am prepared to vouch;" but that this indorsement was given upon the supposition that Dr. Bryant had himself personally examined and measured all the cases reported by him. Very recently Dr. Bryant has informed him that he did not personally examine all the cases, and Dr. Hamilton now withdraws his indorsement, some of the measurements having been made by persons unknown to him, and for whose accuracy he cannot vouch; but to any statement made by Dr. Bryant of facts of which he has been personally cognizant, Dr. Hamilton is willing at any time to give his unqualified indorsement.

ART. VIII.—*The Influence of Chloral Hydrate on the Sensibility of the Nervous System.* By Dr. PROKOP ROKITANSKY. Translated from advance sheets of the Third Volume of Stricker's Hand-book, by Dr. S. H. CHAPMAN.

IN a former publication I have attempted to show that the excitability of the respiratory nerve-centres, situated in the medulla oblongata, and partly also in the spinal cord, is diminished when the former is separated from the pons Varolii.

I sought the essential proofs of this proposition in the fact that young Guinea-pigs, thus operated upon, breathed at first with ever-increasing intervals, and at last ceased to breathe, notwithstanding that the heart continued to beat; moreover, that an artificial respiration, introduced at the proper moment, could reëstablish a diminishing but independent action of the respiratory muscles.

Since in such case the connection between the respiratory nerves and their centres is uninterrupted; since, further, the blood is impoverished by a ventilation poor in oxygen, and thereby the irritation is increased, I came to the conclusion that the final cessation of respiration could be explained only by diminished excitation of the nerve-centres; and that I might suppose the artificial respiration to restore the irritability, at least so far as to make possible a few more respirations, and these to continue until the oxygen in the blood again diminished to a certain quantity.

It seemed therefore advisable to prove this proposition still further by such means as would be expected to diminish the excitability of the nervous system. Chloral hydrate appeared to be the means required.

At the same time publications on this point are still too undecided to draw from them, without further investigation, a conclusion that this substance allays the excitability of the nervous system, especially its excitability to a normal irritation.

The most trustworthy appear to be the communications upon decrease of reflex irritability which Rajewski[1] and Heidenhain[2] have made, the former experimenting on frogs, according to the method of Türck and Setschenow, the latter upon curarized dogs with measurements of blood-pressure.

It is quite different, however, as regards direct excitability. Rajewski says: 1. "Small doses of chloral hydrate temporarily diminish blood-pressure by impression on the vaso-motor centre;" 2. "With larger doses the pressure continues less, in consequence of a weakening of the heart's action." Whereas Heidenhain says that "the tone of the vaso-motor centre is weakened more and more, so that the pressure sinks at length to an almost imperceptible degree, although the direct excitability continues; for, by electric irritation of the spinal cord, one can produce quite a considerable increase in pressure."

It is not, therefore, clear from these statements that the marked diminution in pressure is dependent on less irritability of the vaso-motor centre.

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[1] *Centralblatt*, 1870, pp. 211–225.

[2] "Pflüger's Archiv," 1871, p. 551.

The diminished tone or the paralysis could be a result also of the loss of the necessary irritation.

Of this question I desired first of all to obtain an explanation, and to this end have conducted a number of experiments.

These experiments have resulted in the following:

I.

Chloral hydrate is a cardial poison. When it is introduced directly into the arterial system, the animal dies because of cessation of cardial movements.

If the needle of an hypodermic syringe be passed through the coats of the jugular, or even through the wall of the heart itself, and a concentrated solution of chloral hydrate be introduced with some force directly into the blood, the heart immediately ceases to beat; and indeed, provided the animal be not otherwise operated upon, the heart-beat stops before the respiration; whereas, if one injects a similar dose in the same way, but in divided portions and at intervals of some seconds, the heart-beating does not immediately cease, the animal becomes narcotized, the breathing is prolonged, and, if the dose were large enough to ultimately produce death, the respiration always first ceases, and then the heart-beat.

One observes the truth of this contrast much better by binding a tube into an artery and injecting through it toward the periphery, instead of following the method spoken of in the second case.

If the blood-pressure be transcribed during the process of injecting, one sees that, during rapid injecting through the jugular, the pressure suddenly sinks to the axis of abscissas and the pulse ceases; while with the gradual injecting of a similar dose—the animal being equal in size—the pressure falls to thirty, twenty, and even to ten millimetres of quicksilver; the fall, however, is a more gradual one; but what is of most importance, the pulsations of the heart remain throughout well defined, with a frequency of two and a half beats to the second when the pressure stands at ten millimetres.

If artificial respiration be used, this condition can be borne a longer time; whereas if no artificial respiration be used—on uncurarized animals—the pauses between the respirations become continuously longer—with so low a blood-pressure—the animal ceases to breathe, and lastly the heart-pulsations stop. The result of these experiments is that the same dose of chloral hydrate does not influence the heart-pulsations to such an extent when introduced through the circuitous channel of the capillaries, or directly but gradually into the heart, as when forcibly and quickly injected into that organ.

Since, however, the chloral hydrate does not immediately disappear, in those cases of gradual or peripheral injection, especially as it continues to influence both the pressure and respiration, there can exist between both methods no other difference than that the solution in the one case becomes mixed with the entire circulatory fluid, and, thus diluted, exerts its action upon the heart, while in the other case, on account of the direct and rapid injection, it takes effect upon the heart before it has become diluted by the mass of blood.

In short, we have to do with the action of a more concentrated solution in the one case than in the other.

Without further experimental proof, it is very evident that the sudden cessation of pulsation in cases of direct injection can be the result only of the influence of the drug upon the heart.

Thus it has been shown that chloral hydrate in concentrated solution may be considered a cardial poison; that it destroys the action of the heart by direct influence.

As the second stage of the experiments, I excited the hearts of many animals, both with electricity and mechanically, immediately after they had ceased to beat; and, in accord with the account of Rajewski, found that they were quite susceptible to such irritation; that one could spur them up to repeated contractions. Tapping the heart with the finger, immediately after its ceasing to beat, was quite sufficient to produce rather energetic pulsations.

The muscular tissue of the heart could not therefore have been paralyzed.

From this it is in some degree apparent that the cause of the cessation of pulsation lies in the nerve-apparatus of the heart.

The peripheral nerve-endings are not, however, paralyzed; for, shortly before the cessation of beating, by irritating the peripheral stump of the vagus, I could produce complete stoppage of the action of the heart, which would again contract with weak pulsations as soon as the irritation was removed. From this it seemed possible that the cessation was due to irritation of the peripheral nerve-apparatus.

This supposition, however, is not probable, for the irritation would necessarily yield at length to a nerve-weariness.

Furthermore, the heart begins again to beat, sometimes after a few seconds, again after a long pause of half a minute; but if one measures the dose so that the limit at which a re-establishment of the pulse takes place be exceeded, though it be ever so little, the cessation is a continuous one.

This circumstance excludes the assumption that the cessation is due only to irritation of the peripheral nerves. There remains to us then hardly any other supposition than that the chloral hydrate, in cases of direct injection into the heart and with concentrated solutions, acts by its influence on the motor-nerve apparatus of the heart.

II.

Chloral hydrate diminishes the excitability of the motor centres of the respiratory and abdominal muscles.

If one injects chloral hydrate in the previously-described manner, and in such doses that the pressure sinks to the described low degree, the breathing becomes gradually slower, and at last stops altogether, although the heart's action continues quite strong.

On the other hand, if one produces artificial respiration in a forcible manner for a half-minute long, before the heart also becomes paralyzed, the animal begins forthwith to move his nose in rhythmic unison with the bellows. Now, let the artificial respiration cease; the animal breathes again without assistance.

Soon, however, the pauses become as great as before, and at last cease altogether unless the artificial respiration be again employed. Since the experiment was so arranged that respiration and blood-pressure were transcribed one above the other, I needed to begin the artificial respiration only after a pause of considerable length; so long as the manometer continued to write distinct pulsations, there was always sufficient time for resuscitation.

It results from these experiments that there is a similarity in many ways between Guinea-pigs treated with chloral hydrate and those in which the medulla oblongata has been separated from the brain.

In the former as in the latter cases there can be no doubt that animals die especially because of diminished respiration, and that this latter is produced by diminished function of the respiratory nerve-centres.

The altered condition, the unequal division of labor between inspiration and expiration, the increasing pauses, the cessation of breathing with the muscles remaining still irritable, and lastly the return of respiratory movements after forced respiration, all favor the conclusion that we have to do with an interruption of the functions of the nervous system.

Moreover, also, the animals die, as do those whose spinal cords are divided, without convulsions. Chloral hydrate must have, therefore, a special action on the abdominal muscles.

If one recalls to mind that even irritation of the ischiadic nerve with tolerably strong currents, in cases of deep narcosis, produces no reflex contractions, there is left but one supposition, viz., that the nerve-centres of all the abdominal muscles become weakened in their action; that their reflex—as well as their direct—irritability to dyspnoitic blood vanishes as far as our perception is concerned.

From this the following proposition may be considered to be well grounded in its universal signification, viz., that—

Chloral hydrate diminishes the excitability of the motor centres of all the abdominal muscles.

III.

Chloral hydrate lessens the irritability of the vaso-motor centres.

That chloral hydrate affects the vaso-motor nerves is proved by the fact that the blood-pressure falls to a height of about ten millimetres while the heart beats strong and frequent; and as Heidenhain has already shown—and I can bear him out

—also the reflex irritability of the vaso-motor nerves is diminished, in fact, entirely destroyed.

The only question then remaining is, with regard to the diminution of direct irritability.

To decide this question, I arranged the experiment thus: a spot on the brain or spinal cord, suitable for applying irritation, was laid bare; the transcribing apparatus was arranged, and, during the process of transcribing, irritation was applied for ten seconds; then chloral hydrate was injected, and so carefully that the heart suffered no interruption of pulsation, and the injection was continued until the pressure had fallen to twenty or twenty-five millimetres.

Now, again, the spot previously irritated was touched with the same electrodes as before, and with the same strength of current.

In this way I have obtained, universally from the hemispheres, from the pons Varolii, from the spinal cord, the known curve-variations.

In all these cases, however, the elevation in pressure did not take place after the exhibition of chloral hydrate in the above-mentioned doses.

In addition to this, I utilized the same animals after injection of chloral hydrate, by testing the condition of pressure during artificial respiration.

In these cases also there was no increase of pressure.

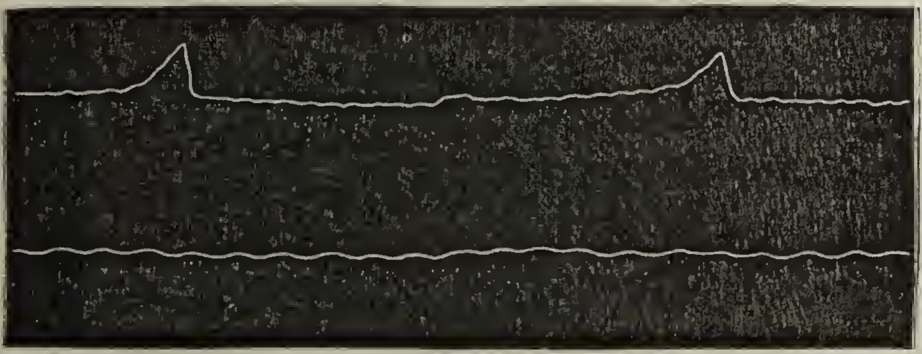
Hence we must conclude that the vaso-motor centres in the spinal cord suffer loss of excitability from chloral hydrate; and, when the dose is sufficiently large, they cannot again be excited, either directly by an electric current or indirectly by dyspnoitic blood.

On the other hand, I must agree with Heidenhain in so far as this, that direct electric irritation of the spinal cord of animals, not curarized but poisoned by large and mortal doses of chloral hydrate, always destroys strong contractions of the abdominal muscles.

As we have seen, however, that animals, not curarized, die from suffocation without convulsions, we are obliged to confess that the direct excitability of the nervous centres which control the abdominal muscles may indeed be diminished but is not destroyed. Now, if we turn once more to a consideration of the respiratory nerve-centres and recapitulate what we have learned, viz., that certain phenomena are constantly observed in experimenting on Guinea-pigs by injecting chloral hydrate into them through an artery, or when the medulla oblongata is divided from the pons Varolii, we shall already be able to catch a glimpse of a fact which is qualified to make the action of both phenomena appear in some degree parallel.

If one meanwhile transcribes the respiration of the poisoned animal with the assistance of more perfect apparatus, it will be seen that also in this case respiratory curves are produced which in general are the analogue of those obtained by section of the spinal cord. In the figure given below, the curve was transcribed by a quicksilver manometer from the carotid of a Guinea-pig, and the upper at the same moment by a Marey's cardiograph with partial pressure on the trachea of the same animal.

PLATE 1.[1]



The horizontal portion of the upper curve shows slight variations, the origin of which I do not know. I conjecture that they may be the result of the vibrations of air in the thorax caused by the pulsations of the heart. The cardiograph was so sensitive that this supposition is not unlikely.

Let us now examine these two curves. We see that they begin with active expiration mounting sharply, and end with passive inspiration descending more gently.

A similar curve has been given in an earlier publication of mine (p. 40, "Stricker's Jahrbuch," 1874).

I am just as little in a position now, as before, to explain this peculiar curve by an hypothesis in any degree satisfactory.

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[1] The plate must be read from left to right.—TRANSLATOR.

The fact that one can produce analogous curves, on the one hand by section of the spinal cord, and on the other by injection of chloral hydrate, brings us nearer to the conjecture that it may be a result of the diminished excitability of the respiratory nerve-centres.

So long as I saw this curve only after the injury, I could not come to this conclusion, for in this case the *post hoc* must be separated from the *propter hoc.*

The phenomenon after section led only to the assumption that the excitability is diminished; but whether this peculiar respiration be a result of this diminution, or rather the result of section of some nerve, could not be more definitely decided. Whereas I produce a somewhat analogous picture also with chloral hydrate, I find myself forced to coincide with those communications of Heidenhain which declare similar phenomena to be the result of chloral hydrate on dogs, and were compared by him with the respiratory processes of Cheyne and Stokes.

In the first place, I must lay emphasis on the fact that the phenomena observed by me bear little similarity to those observed by Stokes.

According to the latter, the respirations, even after the longest pause, begin of themselves again to grow more frequent.

A curve of frequency, according to Stokes's phenomena, would be described as a wave-like valley with smooth surface.

With section of the cord, as well as by exhibition of chloral hydrate—if the experiments be made on Guinea-pigs—the pauses become longer and longer, the respirations more superficial, until they at last cease altogether.

In the second place, I remark that it is not known whether the type of each single respiration in Stokes's phenomena deviates from that of ordinary respiration.

From my curves, however, as from those of Heidenhain, we see that expiration markedly exceeds inspiration; indeed, it is by no means clear from Heidenhain's drawings[1]—as also from some of my own—whether the active expiration was anticipated by an active inspiration. It gives far more the impression as if the animal had, several times successively, actively expirated and passively inspirated.

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[1] Heidenhain's publication, Table 8, marked B.

Moreover, in my cases it is not proved that the animals do not actively inspirate.

If the air be so confined that the animal breathes in with the entire pressure on the transcribing apparatus, then one recognizes immediately the active inspiration, as is made evident by Fig. 2, p. 40, 1874. Now comes under consideration, in the last-mentioned experiment, the deficiency of air-supply and the continuous increase of respiratory irritation.

With regard to this, we are unable to say whether, in transcribing with full respiratory pressure, we have to do with any other fact than a better-defined transcription of a condition which has previously existed.

But this experiment shows us that we dare not decide, from the curves given, that there existed no active inspiration, but only that it is remarkably surpassed by the active expiration.

Taking into consideration all these facts, I am not yet in a position to identify the peculiar disturbances observed by me with the already so-often-described respiratory phenomena.

Clinical Records from Private and Hospital Practice.

I.—*Report of Cases of Strangulated Inguinal Hernia. Second Report.*[1] By Hugh W. Brock, M. D., Morgantown, W. Va.

Case I.—*Oblique Inguinal Hernia, strangulated; Death in Forty-eight Hours; no Operation.*—Mrs. Phillips, aged sixty-one, residing twenty-five miles distant from this place, had a rupture of eleven years' duration, but never wore a truss nor communicated to any one the nature of her affliction up to 23d of March, 1871. On that day, while riding on horseback, she felt unusual pain and swelling in the affected part, and, on reaching home, attempted to relieve herself, as she had done on former occasions, but failed.

On the next morning Dr. Hall, of Blacksville, was sent for, and found an oblique hernia in the right groin, strangulated, which being unable to reduce, he advised that I should be sent for in consultation. In the afternoon of the same day I received the message, but did not reach Blacksville till midnight; found Dr. Hall absent, but at 9 A. M., next day, saw patient in company with Dr. Hall and his partner, Dr. Strosnider. She was then bathed in a cold, clammy perspiration; she had a frequent, feeble pulse, tympanitic abdomen, and a cadaveric expression of countenance.

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[1] Read before the Medical Society of the State of West Virginia, at its Annual Meeting, in Morgantown, May 28, 1874.

Dr. Hall was evidently surprised at the rapid change since his visit twenty-four hours previously. To the hernial tumor, which was about the size of a goose's egg, we did not deem taxis justifiable, gangrene and peritonitis having evidently supervened.

We expressed to the patient's friends the opinion that death was inevitable unless relieved by a surgical operation, and even that offered little or no hope.

Upon this statement, although the patient was perfectly conscious, and had been anxiously expecting relief, an operation was declined, and death occurred at 6 P. M. of the same day.

Remarks.—This case is instructive as illustrating, among multitudes of others, the necessity to hernia patients of wearing an efficient truss, and also as an example of the rapidity with which fatal strangulation may ensue when unrelieved by surgical means.

CASE II.—*Oblique Inguinal Hernia, not congenital; Entero-epiplocele; strangulated Forty-two Hours; Operation under Ether; Stricture divided at External Ring; Intestine returned; Mesentery ligated and excised; Recovery.*—John Delany, farmer, aged seventy, while carrying a log of wood, at the age of eighteen, suddenly felt something give way in the right groin. On examination he discovered a swelling in this region, the size of his thumb, which, under his own manipulation, disappeared. The swelling, however, frequently recurred after any unusual exertion, and with greater frequency and increased size as he became older.

For some years past, more or less permanent enlargement remained, which, when sensibly increased by uncommon effort, was followed by such pain and distress as obliged him to lie down and effect reduction of the additional protrusion by taxis. He had never worn a truss.

On Wednesday, August 6, 1873, while at labor in the harvest-field, stacking hay, at 4 P. M., he felt unusual pain and swelling at the site of his hernia, and, coming down from the stack, stepped aside to relieve himself in the usual way.

Failing, after an hour's effort, to reduce the protrusion, Dr. Hatfield, of Mount Morris, Greene County, Pa., three miles distant, was sent for, and arrived in due time, and, after using all the ordinary means, failed also.

At 12½ A. M., Friday following, I was called upon by a messenger to visit the case.

Accompanied by my brother, Dr. Luther S. Brock, and one of my students, Mr. Cox, I arrived at the patient's stopping-place, fifteen miles distant, soon after daybreak.

We found the patient with a countenance expressive of pain, distress, and exhaustion; some heat of skin, pulse 95, tongue furred and disposed to dryness. He had vomited frequently, had occasional desire to evacuate the bowels, but nothing had passed since the previous Wednesday morning; had slept, also, but little since that time.

On examination I found a hernia of considerable size occupying the right inguinal region, and descending to some extent into the scrotum.

To the touch, on moderate pressure, it communicated a sensation of hardness almost equal to that of bone, and seemed immovably fixed in its situation.

My brother administered ether to the extent of tolerably full anæsthesia, while I applied taxis to the protrusion, aided by the most favorable position—elevation of the lower limbs with rotation inward of the limb corresponding to the side affected—but without any result toward diminution of its size.

We decided, therefore, to operate as soon after breakfast as the necessary arrangements could be made for the purpose. At 9 A. M. we removed the patient from his room, and placed him upon a table in an adjoining porch, where we could have the benefit of abundant daylight and ventilation.

The parts having been shaved and ether administered, I proceeded to operate, assisted by Drs. Hatfield and L. S. Brock, and Mr. Cox. Cautiously dividing the superimposed structures, in the progress of which I had to ligate the arteria ad cutem abdominis, until reaching the hernial sac, I divided it carefully upon a grooved director, when a dark livid mass of tissue, which seemed to have been tightly compressed by the sac, was brought into view and proved to be omentum. On lifting this structure from its bed in the protruded peritoneal sac, to which it was nowhere adherent, a loop of intestine about seven inches in length was discovered lying behind, and apparently having been surrounded by this omental mass.

The intestine was of a dark-red color, and presented beneath its peritoneal surface several patches of ecchymosis about the size of one's finger-nail.

I attempted to reduce the intestine without any division of stricture, but failing in this I nicked the margin of the external ring with the edge of a bistoury, when, on flexion of the thighs, the protruded intestine receded, before the pressure of my fingers, into the cavity of the abdomen.

Judging from the evidently hypertrophied condition of the protruded omentum, in connection with the patient's statement that a certain degree of permanent enlargement had existed in his groin for years past, I had but little doubt that it had lain in its sac outside the abdominal cavity during all that time, though, strange to say, no adhesions had been formed.

In view of this hypertrophied condition of the omental protrusion and its otherwise unhealthy appearance, I determined to excise it. And, as our patient would be remote from surgical aid, in the event of subsequent hæmorrhage, I included the entire mass in a ligature thrown around it on a level with the external ring and severed it with a scalpel just below this point.

This mass of omentum, which I herewith present to members of the Society for inspection, weighed soon after its removal about three ounces. It is now, as they will perceive, bleached and somewhat shrunken by long immersion in alcohol.

The wound was approximated by sutures and adhesive straps, spica bandage applied, and the patient, having taken a half-grain of morphia sulph., was placed in bed, feeling, as he said, "rather comfortable." We left him, after an early dinner, sleeping calmly; pulse 75 per minute, and symptoms, in most respects, favorable.

Dr. Hatfield, retaining charge of the patient, saw him again in the evening of the same day, and, finding some febrile reaction and tympanites, bled him twelve ounces.

I saw the patient again at midnight of Sunday following; pulse 75; tongue moist and clean; abdomen soft; no tympanites nor tenderness over this region.

Monday Morning.—Pulse 70, and patient comfortable in every way.

Assisted by Dr. Hatfield, I dress the wound, which looks healthy; remove the ligature around the stump of omentum by drawing it down and dividing it on a grooved director inserted beneath it.

The case continued to progress favorably in all respects; the wound healed gradually, after which a Hood's truss was applied. I am recently informed there has been no reprotrusion on the side operated upon, but that a hernia has appeared on the opposite side.

Remarks.—Omental herniæ are described by authorities as always presenting to the touch a "doughy feel," without allusion to any extreme degree of hardness, when tightly compressed, such as was manifest in this and other cases coming under my observation.

Another point of interest connected with this case, but not appearing in the account above given, is the fact that the patient's father, two other brothers and a sister had all been subjects of hernia; and, in case of the latter, strangulation at one time occurred, resulting in artificial anus of brief duration, and recovery from her hernia.

Case III. *Direct Inguinal Hernia; Enterocele of Large Size; strangulated Fourteen Hours; Operation under Ether; Division of Stricture at External Ring; Reduction; Recovery.*—Rev. Benjamin Stout, a minister of the Methodist Protestant Church, aged twenty-seven, had been the subject of an inguinal hernia for several years, for which he had worn a truss.

On Sunday, September 28, 1873, he preached at Bald Hill Church, Green County, Pa., and, after the conclusion of the service, while mounting his horse, the spring of his truss broke in two.

Immediately thereafter he experienced a descent of his hernia, and, instead of excusing himself until his congregation had dispersed and seeking a retired spot to replace it, he rode on, in pain and discomfort, conscious all the while that his protrusion was growing larger, to his stopping-place, three miles distant from the church.

On his arrival here he complained of not feeling well, and ate but little dinner, but said nothing of the nature of his ailment except that he was suffering from a disordered condition of his bowels.

He was noticed frequently to retire and to remain for a long time; but he continued reticent upon the subject of his ailment until about four o'clock P. M., when his hostess, an estimable lady, who, under the impression that his attack was ordinary colic, had been supplying him with warm poultices, observing that he was constantly growing worse, insisted on a fuller explanation of his case, when, for the first time, he made known to her his real condition.

A messenger was immediately dispatched for Dr. G. F. Birch, of Greensboro, Pa., distant six miles, and another for Dr. Spencer Morris, of Philadelphia, who, at the time, was visiting friends in the neighborhood.

Both these gentlemen arrived in due time, and, placing the patient under the influence of ether, applied taxis for some time, but in vain. Between nine and ten o'clock of the same evening I received a note, by the hand of a messenger, from Drs. Birch and Morris, apprizing me of the nature of their case, stating that an operation would be necessary, and requesting me to come immediately.

The night being dark, the route rough, and stopping on the way for my brother, Dr. L. S. Brock, who was then professionally engaged, I did not reach the patient's stopping-place till between one and two o'clock in the night.

As informed by the attending surgeons, the patient's sufferings had been of such a character that two grains of morphiæ sulph. had been administered during the evening, with no other effect than a few brief periods of repose and slight diminution of pain and sensibility in the affected parts.

On turning aside the bed-clothing, a scrotal hernia of the right side and of huge proportions was disclosed. The abdomen presented everywhere its normal evenness of surface until reaching the lower part of the right inguinal and suprapubic region of that side, where the hernia seemed to rise abruptly from the surface of this plane, on a level with the external abdominal ring—quite in contrast with the appearance presented in a case of ordinary oblique inguinal hernia emerging along the track of the inguinal canal.

The hernial tumor was firm and elastic to the touch, and measured, from its place of exit to the most pendent point, fourteen inches, and fifteen and three-quarters inches in circumference.

The male organ, in consequence of encroachment of the hernial tumor upon the surrounding parts, was, in appearance, almost obliterated—presenting only a slight elevation on the pubic aspect of the tumor.

After administering ether to profound anæsthesia, both Dr. Morris and myself repeated the taxis, but without success.

Urgent symptoms of strangulation being present, without reasonable hope of relief except by the knife, and our patient, a gentleman of intelligence, aware of his impending danger, seeming impatient of delay, we decided at once upon an operation.

By the light of tallow-candles and two carbon oil-lamps, both burners of which happened to be defective, I proceeded to operate.

Dr. Morris administered the anæsthetic, and I was assisted in the application of sponges, etc., by Drs. Birch and L. S. Brock.

Pinching up the skin over the neck of the hernia between the thumb and finger, I transfixed it, cutting from within outward, with a sharp-pointed bistoury, then divided successively upon a grooved director the superficial fascia and intercolumnar or external spermatic fascia, when the conjoined tendon of the internal oblique and transversalis was exposed. On extending the external incision farther down on the scrotum, the slit margin of this tendon was brought into view—the conjoined tendon thus forming one of the coverings of the hernia over a great part of its extent. I cautiously proceeded with the dissection until the hernial sac was opened, when the several convolutions of intestine forming the protrusion lay upon the surface of the abdomen, livid almost to blackness. Some of the less deeply-colored portions of intestine were marked with long, dark lines of congestion and extravasation.

After dividing the stricture seated in the margins of the external ring, and elevating well the hips of the patient, I replaced the intestine through the direct outlet, approximated the wound with sutures and adhesive straps, applied compress and spica bandage, when the patient was removed from the operating-table to his bed, expressing himself thereafter as comparatively comfortable.

The convalescence of this patient was gradual and steady, so that in the course of a few weeks from the date of the accident he was in good health.

He writes me, under recent date, that, so far as he can discover, he is "cured." By our advice, however, he continues to wear a Hood's truss.

Case IV. *Double Oblique Inguinal Hernia; congenital; Imperfect Descent of Testes; Enterocele; strangulated; Reduction by Taxis on one Side; Operation under Ether upon the other after Strangulation of Ten Hours' Duration; Atrophied Testis removed; Recovery.*—On the afternoon of December 2, 1873, I was called upon by Mr. W., residing two miles from town, stating that a Mr. S., laborer, aged twenty-four, in his employ, was suffering severely with a pain in his side; that he had been working hard, exposing himself, and had probably taken cold.

I told him I thought it best to visit the case before prescribing, but he deemed it an unnecessary expense, saying I might send medicine to relieve the patient, which failing, he would return.

Judging from his account of the symptoms that it was, probably, an attack of pleuritis, I sent senna and epsom salts, to be given as a cathartic—to be followed with morph. sulph. and pulv. Doveri as an anodyne, directing at the same time the application of a mustard-plaster to the side, over the seat of pain.

In about two hours he returned, stating patient was worse and desired an immediate visit. My engagement at that time preventing, I did not start for nearly an hour, and when on the way met a third messenger, in haste. While yet more than a half-mile distant from the house, this messenger halted a moment to call my attention to the cries of anguish uttered by the patient, now distinctly heard by us, which he stated were without intermission at the time he left.

On my arrival I found the patient, in apparent agony, tossing from side to side in bed, seeming unable to compose himself sufficiently long to answer my questions.

On inquiry as to the seat of pain he pointed to the lower part of his abdomen. Turning aside the clothing and removing two large mustard-poultices from this part, I discovered two oblong enlargements in the inguinal regions—one on either side—lying parallel with Poupart's ligament, and extending from near the anterior superior iliac spine to the spine of the pubes.

Having neither ether nor chloroform with me, I administered at once half a grain morphiæ sulph., and kept cloths dipped in cold water constantly applied to the swollen and painful parts, in the hope of mitigating the patient's sufferings so that I could learn something of his history; meanwhile, I dispatched a messenger for a supply of sulphuric ether. In about a half-hour the patient was sufficiently composed to enable me to ascertain by the touch and by inquiry the nature of his malady.

On examination, I found the scrotum empty, the male organ developed to the usual size, pubes well covered with hair, a moderate growth of beard upon the face, voice not coarse, but decidedly masculine.

He informed me that his scrotum had always been an empty sac, but that for some time past, if not always, he had felt two small bodies—one in each groin—which he supposed were his testes. He said he had frequent erections, but had never had sexual intercourse, and never under any circumstances, either when awake or asleep, had he experienced a seminal emission.

The small bodies in his groins, he said, had on several occasions become painful, tender, and swollen after a hurt, and sometimes without assignable cause.

Frequently after heavy lifting or unusual exertion of any kind, additional enlargement, sometimes becoming painful, had occurred in these regions, which on lying down had heretofore always disappeared, after a time.

On the morning of that day he had gone to his work as usual, but after some heavy lifting he discovered enlargements in his groins, although he continued to work until the pain became so excessive that he lay down, in the hope that the enlargements would disappear as on previous occasions, but with disappointment.

He continued to grow worse up to the time of my seeing him, about 5 P. M.

With such a history there could be little doubt that I had a case of double inguinal hernia of the oblique variety—congenital, strangulated, and complicated with undescended testes. Further physical examination confirmed, beyond doubt, this diagnosis.

Its congenital character, however, was not, of course, conclusively established until demonstrated by subsequent dissection. I made no prolonged effort at reduction by taxis until the return of my messenger with the anæsthetic.

Putting him then under its influence, I reduced the hernia upon the left side with but little difficulty. A testis was now palpably present in the groin of this side, beneath the integument, fasciæ, etc., lying below the external inguinal ring. The organ was of full size, firm to the touch and movable under the fingers. When pressed firmly downward, the apex of the tunica vaginalis, thus made tense, presented below the margin of the pubic bone, but the testis remained above.

The protrusion upon the right side was not to be so easily managed.

After using taxis in varied positions of the body for a considerable time without success, I gave the opinion that an operation would be required. To this the patient objected. I then suggested that Dr. Joseph A. McLane, or some other regular practitioner, be called in consultation; that I would go to my office and return with instruments to operate, in case an operation were assented to and the consultation should devise no better means.

About 8 P. M. I returned, accompanied by my assistant, Dr. Howell, and not long thereafter Dr. McLane arrived, who applied taxis, with no better success than myself.

The patient, though still unrelieved, objected to the knife, and, by the time he consented and arrangements could be made for an operation, it was almost 11 P. M. Every thing being in readiness at that hour, I proceeded to operate, assisted by Drs. McLane and Howell. The skin and fasciæ beneath being divided, the cremasteric covering was presented of unusual thickness; instead of scattered loops of muscular fibre united by areolar tissue, a dense mass of muscle had to be divided to expose the underlying infundibuliform fascia.

The dissection was cautiously proceeded with until the sac, which, as anticipated, proved to be the tunica vaginalis, being reached and opened, was found to contain a loop of strangulated intestine and a testis of materially diminished size.

The tunica vaginalis terminated in a *cul-de-sac* which, in its vertical direction, extended a little less than an inch below the external ring, and in a transverse direction, or rather obliquely upward, about double that distance. The protrusion, having been arrested in its descent downward, was deflected along the surface of the aponeurosis of the external oblique muscle toward the anterior superior iliac spine, in which situation it lay when exposed by the opening made upon a grooved director in the vaginal tunic.

The bowel was of deep-red color, and, where joined by its mesentery, presented for some distance a bright-red elevation or prominence, bearing a striking resemblance to a cock's-comb, resulting from the distended and hyperæmic state of the mesenteric vessels.

The application of taxis directly to the bowel failing to replace it, after enlarging, slightly, the external ring by the knife, I introduced the index-finger of the left hand along the inguinal canal until reaching the neck of the sac at the site of the internal ring, where I found it tightly constricting the bowel. Introducing a probe-pointed bistoury, the blade of which was wrapped with adhesive plaster to within a half-inch of its point, I divided freely the stricture, after which the protrusion was readily reduced.

The undeveloped, or, what was more probable, judging from the history of the case, atrophied testis, resulting from orchitis following compression or other external injury, lay just outside the external ring, being held in that position by the shortness of the cord, which allowed of no further descent of the organ. The organ, or, rather, the remains of it, lying in that position over which a truss would have to be applied in the event of the patient's recovery, to prevent his life being again endangered by reprotrusion, we felt undecided as to the best course to pursue. We explained matters to the patient's nearest friend, stating as our opinion that his life would be safer if the testis were removed, but that we would not do so without his approval, to whom he had intrusted his interests as far as a friend, merely, could subserve them. He expressed the desire that we should do whatever would result in the greatest security to the patient's life. We therefore severed the cord and secured the two divided arteries, each by a separate ligature.

We approximated the wound by sutures and adhesive straps, applied compress secured by spica bandage, gave $\frac{1}{2}$ gr. morph. sulph., and left the patient sleeping.

Immediately on returning to my office—less than two hours after the operation—I divided the extirpated testis with a scalpel, and from the divided surfaces of the gland and epididymis I secured, upon the point of the instrument, portions of the contained fluid of each, and, placing these upon a glass slide covered with thin glass, I examined them with a microscope under a $\frac{1}{8}$-inch objective; but in none of the specimens thus examined were there any spermatozoids to be seen.

On the next morning I saw the patient with Dr. McLane, and found him doing well in every respect. At ten o'clock of that night he suffered from retention of urine, and was relieved with the catheter by Dr. Howell, which operation had to be repeated three times, after which there was no trouble from this or any other source.

December 5th.—Wound dressed; looks well, pulse 70, skin cool.

7th.—Wound dressed; looks healthy and seems uniting by first intention; sutures removed. There was not a drop of pus to be seen at either of these dressings, nor at any time subsequently, the wound uniting throughout by first intention.

One ligature came away in ten days, the other several days thereafter.

In less than a week, he was, against orders, walking about the farm, supported only by compresses secured by spica bandage as a protective measure against the return of his herniæ.

His bowels were moved on the Monday following the operation, when, as had been his custom, he repaired to the woods for the purpose; and at no time subsequent to the operation did he attend to this business except in the woods.

During the third week we applied a Hood's double truss, its application in no way interfering with the testis of the left side, since which time he has, so far as I am informed, had no return of his hernia.

Remarks.—Among the prominent points of interest suggested by this case are those relating to—

1. The liability, in these cases, of undescended testes to be accompanied with hernia.

2. The propriety of removal of an imperfect testis in such a case.

3. The question of virility of crypsorchides, of which this patient was an example.

Upon the first point above named, Curling says, "My observations lead me to believe that, if the descent does not take place within a twelvemonth after birth, it is rarely or never afterward fully and perfectly completed without being accompanied with rupture."

My own observations have not been extensive upon this point, but, so far as they have gone, coincide with those of the author above quoted.

I once witnessed a case of intestinal obstruction, following large indulgence in ripe peaches, plums, and grapes—the last-named having been swallowed with their contained seeds and the rind—which proceeded rapidly to a fatal termination, in which there was a small cylindrical tumor projecting from the right external inguinal ring about two and one-quarter inches in circumference and three-quarters of an inch in length from its attachment within the ring. The tumor seemed firmly attached in this situation, and to the touch seemed as hard as cartilage.

I had seen the case a few months previously in consultation with my friend Dr. McLane, in whose charge it then was, and at the time learned the following history:

The patient, now about twenty-two years old, had, in early boyhood, noticed that the left testis lay high up in the scrotum against the pubic bones, but, as he grew older, gradually descended until it became quite movable throughout the scrotal cavity.

The right testis, previously to the age of twelve or fourteen years, lay high up in the groin, but gradually descended until it entered the upper part of the scrotum, where it remained without further descent, and was now separated only by a short interval from the tumor above named, and with which it seemed connected through the medium of the spermatic cord. In the tunica vaginalis there was a slight collection of fluid, constituting a small hydrocele.

Between one and two years previous to the date of the consultation he had observed this enlargement (then of small size) in the groin, above the testis, which continued to increase until it had reached at this time nearly, if not fully, the dimensions above given.

He had suffered lancinating pains in the tumor, extending sometimes up toward the abdomen and downward along the limb of the affected side, not unfrequently accompanied with cramps in the muscles of the limb as far down as the foot.

At the time of our seeing him in consultation, he had, after violent exertion at base-ball, an attack resembling syncope, followed by the phenomena above described.

Judging from the gradual formation of the tumor, the character of the pains therein and extending therefrom, and its extreme hardness, we thought it not improbably a growth of a malignant nature.

That it was not a hernia, containing intestine, we felt satisfied from its physical characteristics, and from the fact that no symptoms of strangulation had ever existed. We were, in fact, in doubt as to its true nature, and advised palliative means, enjoining rest and regular habits, until there should be some further development.

He had attacks similar to the one above described, but no material change occurred in the tumor, either as to dimensions, appearance, or sensations experienced therein, up to the date of his last illness. He then suffered and died with all the symptoms of internal strangulation of the bowels, but had no unusual pain or tenderness of the tumor in his groin.

I rode several miles in the night, and exhausted argument, to obtain the consent of his friends to an autopsy in this case, but without success.

Its pathology, therefore, remains in doubt. But my subsequent studies of the case have inclined me to the opinion that the tumor in the groin was an epiplocele of gradual protrusion and hypertrophy, that, having followed the descent of the testis and contracted adhesions outside the cavity of the abdomen, formed thus an intra-abdominal band of omentum, against which some portion of the intestinal tube, in its movements, may have, on the occasion of the patient's last illness, become tightly compressed; the continuity of the intestinal tract becoming, in this manner, broken, the further passage of its contents was at this point arrested.

If such was its pathology, it furnishes an example not only of the liability to rupture in cases of imperfect descent of the testis, but also of one of the dangers connected therewith.

In relation to the second point suggested, I would remark that it is impossible to lay down a set of principles applicable to all the varied cases coming under the observation of the practitioner; each must, in some degree at least, stand isolated and upon its own merits.

Had the testis in question presented to our minds evidence that it would ever prove of service to its possessor, we should not, of course, have entertained a proposition for removal.

But regarding it as no longer a witness of manhood, and its continued presence as adding to the patient's hazard, we deemed our proceeding legitimate. As confirming its propriety, I will quote from an authority than which the world furnishes no higher.

By private correspondence with my friend Prof. Joseph Pancoast, to whom I communicated by letter the details of this case, substantially as here recited, he replied, under date of 4th inst., as follows: "I think, in regard to your case of hernia with imperfect descent of an atrophied testis, that you have acted in accordance with good surgery. For, not only would you have had a difficulty in applying a truss, but the pressure, if it even could have been borne, might have resulted in degeneration of the testis.

"I have often removed cancerous testes when they have laid on the aponeurosis of the external oblique, and even when they have been lodged at or within the internal ring—in one instance between the peritonæum and abdominal wall.

"In these undescended cases I think there is especial liability to scirrhus, or cancer in some form, and on that ground I would support you in your plan of proceeding in the case referred to."

As to the third point, whether a crypsorchis is capable of procreation, it seems strange that such a question should yet be considered *sub judice*, since it is now known that the power of intromission of the male organ, accompanied with the ejection of a fluid containing an abundance of healthy spermatazoa, the presence of which may readily be determined by microscopic examination, is the only essential requisite to establish, beyond doubt, the procreative power of the individual.

In no department of science has the microscope rendered more brilliant service than in the investigation of the causes of sterility. The sterile condition, formerly supposed to belong almost exclusively to the female, has, by the labors of Sims and others, been proved to obtain in a large proportion of males where offspring does not succeed to marriage. In many of these cases the vigor of sexual passion, according to these authorities, remains unimpaired, but examination of the semen reveals entire absence of spermatozoids, the defect in most of such instances being traceable to previous double epididymitis incident to gonorrhœa, illustrating the truth that, however remote may be their visitation, vice has its penalties in some form.

As to the relation between cryptorchidism and virility, Miller, in his "Practice of Surgery," says: "Impotence may depend on imperfect development of the testis; but not on imperfect descent. The organs are as efficient, functionally, in the abdomen as in the scrotum."

Curling, "On the Testis," regards their retention within the cavity of the abdomen as more favorable to efficiency than in the inguinal canal or anywhere short of the scrotal cavity, esteeming their presence in the former situation as "perfectly compatible with virility."

Hamilton, in his "Principles and Practice of Surgery," says: "As a rule, retained testes are immature, atrophied or degenerated, and the virile function is feeble; exceptions, however, are quite frequent, and no anxiety need be felt upon this point if one testis has already descended and possesses its normal size."

Gross, in his elaborate "System of Surgery," says, "It is asserted that an undescended testicle is incapable of forming spermatozoa."

As the author does not take exception to the assertion, it is to be inferred that he regards it not without foundation in fact.

Under the head of "Sterility," the same author remarks, "The researches of Goubaux, Gosselin, Follin, Godard, and others, show that a retained testicle is, as a rule, incapable of producing spermatozoa, and that, when both organs are in this condition, the individual is incapable of procreation."

In view of the unsettled state of this question, I was exceedingly anxious to obtain a specimen of this patient's semen for examination. I explained to him the fact that it was considered a matter of doubt whether persons with his defect were capable of procreating their species; that, as he might in future wish to contract matrimony, and, in that event, like most men, desire offspring, I could, by an examination of his semen, inform him, beyond reasonable doubt, whether he might expect to become a father if united to a woman of healthy sexual organization. I called his attention to the subject on different occasions, without, however, suggesting any filthy mode of procedure for furnishing me with the desired specimen—leaving that to his own election.

My friend Dr. F. H. Patton, of Fayette County, Pa., who on occasion visited the case with me, was equally interested on the subject, and insisted on the importance, to the patient, of knowing his virile status.

Either from our patient's indifference to the matter, his want of confidence in our ability to give him the desired information, or to an inability on his part to furnish the necessary material for the purpose, or other unknown cause, our scientific curiosity was not gratified.

That the removed testis had been incapable of secreting normal semen, I was confident from its diminished size, and from the microscopic examination I had made of its contained fluid.

But, judging from the full size and firmness of structure, to the touch, of the remaining organ, from the frequent erections, which the patient stated were vigorous both since and previous to the operation, and from the masculine characteristics before mentioned, I was led to believe him possessed of full sexual virility.

On the other hand, the fact of his being a crypsorchis, and never, according to his own statement, having experienced a seminal emission during his erotic dreams, left me in doubt.

As the result of no inconsiderable experience with and study of hernia, I desire to direct attention, in concluding this report, to the importance of early operative interference in cases of strangulation, when taxis, applied to a reasonable extent, has failed.

Exceptionally, cases now and then occur where extremely prolonged taxis succeeds, and even spontaneous recession, after its failure, is an occasional event.

My preceptor, Dr. Charles McLane, had a case which receded spontaneously after the patient was placed upon the operating-table.

Prof. F. H. Hamilton reports a case in which this occurred after he had commenced to operate, but before reaching the sac. Such cases are, however, as Prof. Hamilton very properly remarks, so rare as to justify no expectation of such a result.

Least of all are such cases to be intrusted to an "expectant plan of treatment."

Not very many months since, when in conversation with one of the most distinguished members of this Society, on the subject of hernia, he remarked to me, interrogatively, "Did you know that in the early part of my practice I allowed two or three of my patients to die for want of a surgical operation?"

On my replying in the negative, he reaffirmed the fact, adding, "It shall never occur again."

I shall always vividly remember an instance coming under my own observation soon after my graduation. Being on a visit to my native village, through the courtesy of a medical friend then located there, I was invited to see his patient, Mr. G., a merchant of the place, and a man of wealth and position, who had been the subject of an inguinal hernia for several years. A few days previously his hernia had protruded to the size of a hen's-egg, and become strangulated. My friend being called, and finding himself unable to reduce it by taxis, advised a consultation, in the expectation that an operation would be performed.

The former family physician of the patient (residing in an adjoining county), who was an eminent and accomplished practitioner of medicine, but who, as my friend expressed it, had "a mortal aversion to the sight of blood," was brought, and, after examination, and the use of taxis without success, advised the patient to make his will, and leave his hernia to Nature.

The patient survived nearly a week after that event, and died unrelieved by Nature, and without any attempt having been made toward relief by art except the taxis.

At the time of my seeing the patient he was still able to rise from his bed, making vain attempts, in the easy-chair, to evacuate his bowels; but the decision of the consulting physician was, in the estimation of the friends, regarded as final —especially as compared with the opinions of youth and inexperience such as pertained to myself and friend.

Respecting prognosis, after operations for the relief of strangulation, Hamilton, in his recent work on Surgery, says, "Mr. Hey states that he lost three patients out of five upon whom he operated." The author adds, "It is my impression that the mortality remains about the same as when Mr. Hey wrote, now nearly one hundred years ago."

Prof. Gross, in one of his tables, serving "to show what has hitherto been the mortality after some of the so-called capital operations," gives 622 cases of herniotomy, of which 326 recovered, and 296 died.

Such a mortality must include a large proportion of cases far advanced toward fatal strangulation before operative procedure has been resorted to.

Of the six patients upon whom I have operated within the past four and a half years, all made good recoveries, and all are to-day living and in good health except one, who some months subsequent to his recovery met with a fatal accident, the details of which were given in a previous report, and published in the NEW YORK MEDICAL JOURNAL for January, 1873, and republished in the *Richmond and Louisville Medical Journal* in April, 1873.

From my own experience, therefore, I am constrained to the opinion that the danger consists, not in the operation, if done with ordinary skill, but in its delay.

In all my operations I have opened the hernial sac, a proceeding which, justly I think, has now more friends than that proposed by Petit, and practised by himself and others, of dividing the stricture outside the sac and reducing the protrusion uninspected.

Wounds of the peritonæum, *per se*, are no longer looked upon as involving much greater hazard than those of other structures.

Sims, in his researches upon ovariotomy, seems to have demonstrated that the dangers attending that operation do not result simply from traumatic peritonitis, but that the bloody serum, as a product, by its retention within the peritoneal cavity, undergoes putrefactive decomposition, and induces death by septicæmia.

To obviate this, he establishes drainage through an outlet made by perforating Douglas's *cul-de-sac*.

Prof. McGuire, of Richmond, has since practised the same proceeding, and suggests in cases of gunshot-wounds, and other injuries involving the peritonæum, in male subjects, a similar drainage from the bottom of the peritoneal cavity by means of an opening made through the rectum.

These facts suggest the importance of allowing free exit of discharges after hernial operations, by keeping the wound open at the most pendent point, and favoring exit by suitable position of the patient, especially at each dressing.

II.—*History of a Case of Gastro-Elytrotomy.* By Alexander J. C. Skene, M. D., Professor of Gynæcology in the Long Island College Hospital, Brooklyn, N. Y.

The history of this case is given, believing that an operation which has such claims upon the notice of the profession must necessarily be interesting.

The experience obtained in a single case so rare as this, which I believe is the third on record, may also afford some information of practical value. No pretensions are made of adding any thing to the history and clear description of the operation as given by Prof. T. Gaillard Thomas. I simply desire to add my testimony to the views of Prof. Thomas as tested in the case which came under my care, and also to call attention to some minor points in the operation which differed from the cases already recorded.

Dr. Charles Corey was called to see the patient on Saturday morning, March 21, 1874. He then learned that she was a primipara at full time. Her general health had been fair for years; she was rachitic when a child, and did not walk until she was over five years of age. Labor began on the night of Friday, the 20th. The os uteri was dilated, but the head, the presenting part, was wholly above the superior strait.

When the os became fully dilated, the doctor ruptured the membranes, but the head did not at all engage in the pelvic cavity.

Drs. Andrews and Fürgang were called in consultation, and it was decided to try version.

At three o'clock on Sunday morning the operation was tried, but was found to be impossible, owing to the shortness of the antero-posterior diameter of the pelvis, which was not more than two and a half inches in diameter. At 8 A. M., of the same day, delivery by craniotomy was undertaken, but after perforating the head, that also was abandoned because of the œdema of the parts and the narrowness of the pelvis. I saw the patient in consultation with the gentlemen named, at 2 P. M. on Sunday, about forty-eight hours from the time when she was taken in labor. Gastro-elytrotomy was proposed and agreed to by all the gentlemen present, as the only means of giving the patient a chance for her life. It was also believed that if she died—which in all probability she would—she would be relieved from the severe labor-pains which still continued.

At this time she was suffering from exhaustion. Her pulse was rather feeble and over 130.

She was anæsthetized, and I operated with the assistance of the gentlemen in attendance, and Dr. George Cushing. The general rules laid down by Prof. Thomas were followed, and I can testify to the truth of his statement that the operation is "exceedingly simple, and may be performed with rapidity and certainty;" for, although the operation was unknown to me in every sense, except the descriptions of it which I had read, I was able to make the dissections and deliver the child and placenta in ten minutes, and without making any haste. The patient came out from the anæsthetic very well, and remained free from pain afterward. The exhaustion and shock were but slightly increased by the operation, but they gradually became more marked, and she died seven hours after the operation.

There are several observations which I made during the operation, which are of sufficient importance to be worthy of special mention. The incision through the skin and superficial fascia was made from the spine of the pubis to the anterior superior spinous process of the ilium, as directed by Prof. Thomas. This I found to be longer than necessary. The muscles were then divided a little more than two-thirds of that distance. The opening made appeared to be rather small, but I found that it stretched with the greatest facility, and was therefore ample.

The finger was used to raise up the vagina at the point where it was opened. I believe that this method is preferable to using the sound, as directed by Prof. Thomas. I was able in this way to avoid a large vessel which I felt pulsating. The finger was also used in place of the blunt hook to draw the cervix up into the right iliac fossa, while the fundus was carried to the left side.

In place of delivering the child by version, as recommended by Prof. Thomas, I seized the occipital bone with the craniotomy-forceps, and extracted the child with the greatest ease. At the same time I had the ordinary obstetric-forceps at hand, and satisfied myself that I could have applied them to the head and delivered with more facility than I could by performing version.

The experience afforded by this one case has fully convinced me that the operation should take the place of Cæsarean section, and in deformity of the superior strait it should be tried in place of craniotomy when the life of the child could be saved by doing so.

III.—*Successful Case of Resection of Upper Extremity of the Femur, and Removal of Portions of the Pelvic Bones, for Hip-Joint Disease of Fourteen Years' Standing.* By Blair D. Taylor, M. D., Highland Falls, Orange County, N. Y.

Bony anchylosis has been regarded as the means employed by Nature to effect a cure in cases of suppurating hip-joint disease, and its advent is, in the opinion of many surgeons, the signal for the destruction of bone-tissue to cease. In the appended case, however, the most complete and perfect bony anchylosis between the wasted head of the femur and the dorsum ilii must have existed for years, while at the same time rapidly-increasing disintegration of the pelvic bones was in progress.

This case also illustrates another point: the difficulty of distinguishing between motion produced at the sacro-iliac joint and the movement of the head of the femur in its unnatural position on the dorsum ilii. After repeated examinations directed to the solution of this very difficulty, I became thoroughly convinced that a considerable portion, at least, of the movement permitted in rotating the shaft of the femur was located at the head of that bone. This result, of course, caused me to discard the idea of bony anchylosis entirely, and it was not until the operation took place that I was undeceived.

The patient, Mr. K. C., was eighteen years old at the date of operation, October 10, 1872. There is no family history of scrofula or allied diseases as far as can be ascertained. The record of the early symptoms and subsequent progress of the disease up to the time he first came under my care, as stated by himself and parents, is as follows: At the age of four he fell and struck his hip on a stone, but felt little inconvenience from the accident until six months afterward. He then began to limp in walking, and to have a good deal of pain and tenderness about the joint. Eight months after the receipt of the injury, he was seen by a prominent surgeon of St. Louis, Mo., who diagnosed "partial dislocation of the head of the femur," and put up the limb in a "gutta-percha splint." It remained in this apparatus four months, and on its removal was found to be shortened two inches, and soon after an abscess formed on the outer aspect of the thigh. From that time (1859) until 1870, an abscess formed regularly every winter, leaving many freely-suppurating sinuses behind them, while the shortening, adduction, and internal rotation of the limb, reached their maximum. In the interim there was no treatment except to have the abscesses opened as they formed. From 1870 to the date of operation, abscesses occurred every two months, while his general health rapidly deteriorated.

I first examined the diseased joint in the beginning of 1872; at that time the limb was shortened three and one-half inches, the foot very much inverted, with the toes resting on the lower part of the opposite ankle. The thigh on the affected side was adducted, and rotated inward, the knee carried forward and resting just above its fellow of the other limb. The nates were much wasted and shrunken, as was the whole of the affected extremity, and the *head* of the bone could be felt on the dorsum ilii far above its natural position. Half a dozen freely-discharging sinuses were distributed on the anterior, posterior, and external aspects of the joint, one of which, on the lower border of Poupart's ligament, was most active, the combined result being from six to eight ounces of pus daily. As before mentioned, fibrous anchylosis *only*, with slight motion, was presumed to exist at the situation of the head of the bone. The patient was very thin and pale, with poor appetite, almost constant pain, and very little sleep; hectic was a daily occurrence, and night-sweats occasionally. He managed to get about with the aid of a high-heeled shoe, but the slightest over-exertion would confine him to bed for days; and indeed for six months before the operation he was very seldom out of the house, most of his time being confined to the recumbent position. His life was fast ebbing away under the combined influence of the suppuration, pain, loss of sleep, anorexia, and hectic.

With the assistance of Drs. Letterman and Cotton, I operated on the 10th of October, 1872, using the semilunar incision and the chain-saw. To my surprise, the femur and dorsum ilii were so intimately welded by bone that the line of junction could not be detected, necessitating *two* sections with the chain-saw. Three inches and a half of the femur were removed, the bone being sawed below the lesser trochanter. There was no trace of the acetabulum, the pelvic bones, as well as the diseased portion of the femur, being completely honeycombed. A large quantity of necrosed and carious bone was removed with gouge and chisel from the dorsum ilii, and from the central part of the body of the pubes and tuberosity of the ischium, the disease having partly tunneled these bones, o that, after the operation, cavities were left resembling two ingers of a glove. At the original seat of the acetabulum so much disintegrated bone was removed that the remaining depression was as large as the bowl of a coffee-cup of medium ize.

The patient rallied well from the operation. A heavy weight was attached with adhesive plaster to the leg, and he was put on nourishing diet, the wound being syringed daily with a weak solution of carbolic acid. The first week in January, 1873, I commenced passive motion, and on the 1st of February he was out of bed. Not long after, a small ring of bone at the upper end of the femur exfoliated, but ever since there has been nothing to retard the progress toward complete recovery.

The patient was made to exercise the limb daily in all the motions the muscles were capable of producing, and gradually learn to bear some weight upon it.

His present condition, twenty-one months after the operation, is as follows: Limb the same length as before the operation, there being no reproduction of bone, as the periosteum had been utterly destroyed by disease. The toes turn out, the knee can be fully flexed, there is free movement at the hip-joint in all directions except abduction and external rotation, which are of course lost; can bear his whole weight on the joint and walk across the floor without pain, also "climbs trees and goes up a ladder." A few drops of pus discharge daily from the sinus in the groin, but the flesh has increased greatly, appetite very good, rosy color in the cheeks, and sleeps well at night, with no pain. The only trouble there has been resulted from exposure to cold and damp, causing several severe attacks of neuralgic pain, sometimes affecting the diseased side, and nearly as often the other; they have yielded readily, however, to a single hypodermic injection of morphia. Really the only inconvenience he suffers now is from the shortening of the limb, which is no greater than before the operation, while the power of motion is much increased.

The only bar to the complete cure of this case is the continuation of a slight amount of suppuration from the sinus below Poupart's ligament, which would seem to indicate some lingering disease in the pelvic bones. My object is to give the case for what it is worth, and I shall keep the patient under observation, so that, if the disease should return at any future time, it may be duly noted. At any rate the patient has been rescued from a painful death, and has enjoyed nearly two years' immunity from suffering, in consequence of the operation.

IV.—*Rupture of an Atheromatous Aorta, and Embolism of the Left Iliac Artery.* By W. M. Chamberlain, M. D., Physician to Charity Hospital and Demilt Dispensary.

The following history seems to present points worthy of record and remark:

J. C. B., a manufacturer, fifty-one years of age, five feet six inches in height, weighing one hundred and eighty pounds, in every way well developed, of regular and temperate life, came under my notice on the 17th of August, 1874.

His family were not aware that he had consulted a physician for eighteen years before that date, except on one occasion, when he was told that he was suffering from nervous prostration, advised to leave off smoking, obeyed and got better, finally quite well. He had taken two life-insurance policies in the last two years, after examination. His wife had sometimes noticed a rapid action of his heart, but when she mentioned it he replied that he was not conscious of it.

He was habitually quiet in all his movements, but no one knew that active exertion incommoded him in any way. On the 15th of August he went down to Long Branch for recreation. After retiring for the night, he reports that he had a "nervous chill, followed by some fever," but it passed away, and did not much impress his own mind. The following evening he returned to New York. At breakfast on the morning of the 17th, his health and spirits excited the notice of friends, and he replied that he never felt better in his life. At or about 12 M. on that day, while standing and writing at his desk, he felt a sudden sharp pain in his "chest." From the fact that at the time he thought of it as perhaps "wind," I infer that the pain was felt about the epigastrium.

Directly it "passed downward to the kidneys," he felt a faintness, weakness, and oppression for breath, but shortly he was able, with the assistance of two men, to walk across the street, and up two flights of stairs to a bedroom. About fifteen minutes later I found him slightly livid in color, bathed in cool perspiration, complaining of great difficulty in breathing, pulse weak, about 150 per minute, a condition like collapse. He said that, directly after the pain attacked him, he felt a numbness and loss of power in the left leg. The respiratory sounds were hurried but normal, both sounds of the heart audible, no murmur or thrill. The percussion note was clear all over the thorax, front and rear; air traversed all portions of the lungs.

There was total loss of impulse in the left femoral artery, as high as the ring. A feeble, doubtful pulse in the posterior tibial. Treatment appropriate to collapse was directed, and, the gravity of the case being apparent, Dr. A. B. Mott was called in consultation, and continued in attendance as consulting-physician until death occurred. By degrees the symptoms of collapse passed off, but the dyspnœa and interruption of circulation in the limb continuing, it was enveloped in blankets and heat applied.

At 9 P. M. the pulse was 150; respirations 50–60; dyspnœa continuing; limb warm. At 9 P. M. the next morning the pulse was 130, of fair volume; both limbs of the same temperature, but the left pulseless and a little livid. The dyspnœa was not relieved or materially increased. The chest was generally and abnormally resonant under percussion, and the respiration "rude" throughout. Heart-sounds muffled. The patient had passed a night in tolerable comfort, sleeping at short intervals. The evening record was essentially the same.

The following morning (third day) Dr. J. R. Leaming was added to the consultation. A very careful examination of the chest showed the same conditions above recorded, except that there was a crackling sound across the lower portion of the chest posteriorly, on both sides. No doubt was felt that all portions of the lung were pervious to air, but it was believed that the abnormal resonance was due to an interruption to the entrance of blood. No abnormal thrill or impulse could be heard. The left lower extremity was warm and free from pain, but heavy and pulseless. Cutaneous sensibility diminished, but not abolished.

The following morning (fourth day) the dyspnœa was apparently increasing, the moist *râles* continuing, but air still passing all through the lungs. The general condition of the patient was not materially changed; action of the bowels and kidneys maintained by drinking Congress-water. Dyspnœa palliated by inhalation of oxygen. Food was taken with relish, and in sufficient quantities.

The following morning (fifth day) the left chest was found dull on percussion throughout, except at the upper and lateral portion. Marked flatness from the apex of the heart upward to the middle third of the clavicle, and across to the right of the sternum. Egophony distinct as high as the middle of the scapula. Dyspnœa persistent and increasing. Complained of some pain about the heart, and shrank from percussion.

9 P. M.—Condition about the same. Objected to further examination of the chest; limb warm and natural in appearance. Had more power in it. Thought he felt better, and talked with his family of a hope of recovery. After sitting awhile in his chair, he returned to his bed, a little before 11 P. M.; was shortly observed to straighten himself backward and become incapable of articulation. Death occurred at 11½ P. M.

Autopsy, Sixteen Hours after, the body having been on ice.—Present, Drs. Mott, Austin Flint, Sr., Guleke, Rogers, Wagner, and Pooley. The sternum was removed with difficulty, on account of ossification of the cartilages. Beneath it, from the level of the heart to the root of the neck, lay a long compressed mass, inclosed in the anterior mediastinum, all the areolæ of which were distended with firm coagula of blood. The right pleura contained a little serum, the left was three-fourths filled with serum and soft coagula; of the latter a mass equal in size to the healthy adult liver was lifted out, and about a quart of serum. Since this serum was clear, free from fibrinous flakes, and the serous membrane was everywhere smooth and shining, there was no evidence of inflammatory effusion or exosmose. That which we saw, therefore, was the separation of the liquor sanguinis from the crassamentum, as appeared by the relative quantities of each.

The pericardium was smooth, transparent, entire, and collapsed. The lungs were free from traces of old or recent disease, pale, crepitant everywhere except about the entrance of the vessels, particularly on the left side, where there was a considerable area solidified by the infiltration of blood. Prolonged effort was made to find the point where the blood escaped into the pleura, the viscera being *in situ*, but the search was not successful. Therefore, the trachea and vessels were cut at the root of the neck, the organs lifted, and the aorta cut in its descending portion.

The pericardium was now opened, and showed a heart of normal size. The ventricles, opened longitudinally, were found to have firm walls of clear red color; the cavities were empty, and the internal surfaces everywhere free from signs of disease or degeneration, except that the corpora Arantii of the aortic valves were gritty and enlarged. About an inch without the valves, in the aorta, there were three patches of atheroma, about three lines in diameter, arranged in line parallel to the course of the vessel. They were in a softened and excavated condition. The ulceration extended through the intima and nearly through the muscular coat, but there had been no separation of one coat from another. No sinus or sacculated portion was found upon any portion of the thoracic or abdominal aorta, nor was the point where the blood escaped into the mediastinum found; that portion of the aorta which was removed with the heart, extending an inch or more beyond the left subclavian, was opened and carefully examined, but showed nothing more than an occasional patch of atheroma. Time was not allowed us to dissect up the remainder of the aorta, but we saw no apparent dilatation or rupture anywhere in its course. The common iliac of the left side was plugged, just below the bifurcation of the aorta, by a gritty fragment of the vessel. At the point where this was arrested, the calibre of the iliac was narrowed by a calcareous patch, which extended nearly around the artery. Between the plug and the femoral ring, the vessel was filled with a soft coagulum like currant-jelly. Wherever examined, the muscular coat of the artery could be easily split, and the adventitia very easily detached from it. I could not say whether the muscular coat would more readily divide into laminæ, or separate as a whole from the adventitia. A little care would secure either result, and this condition was observed both in the arch of the aorta and throughout the iliac.

It is much to be regretted that we were unable to prolong the examination so as to find the sinus by which blood entered the mediastinum. It probably lurked somewhere on the posterior wall of the vessel below the arch and above the bronchial arteries, perhaps coinciding with the point whence the aortic fragment was detached to constitute the embolus. The infiltration of the lungs about the root was in the areolar tissue, not in the air-cells. There was never, in the progress of the case, any cough or bloody sputa.

In the review of this interesting case we are at liberty to make the following conjectures: The chill which was felt on the night of August 15th may have marked the penetration of blood between the coats of the aorta at the site of some atheromatous patch. But the obstruction was not such as to occasion any continuous disturbance of comfort. On the morning of the 17th, at the moment when the patient felt a sudden pain in the epigastrium, sweeping downward to the kidneys, quickly followed by arrest of circulation in the left leg, and increasing dyspnœa, the lifted portion of the aortic wall was detached and carried downward into the iliac, and there stopped at a point made narrow by calcareous infiltration. About the same time the external coat ruptured into the mediastinum. A considerable volume of blood escaped, producing the symptom of temporary collapse. Perhaps it traveled along the sheath of the bronchial arteries into the pulmonary parenchyma, or it somewhat compressed the pulmonary artery, in some way shutting off the supply of blood to the lung, producing dyspnœa. It will be remembered that, until the last day, the chest was found to be abnormally resonant, and that at the autopsy there was no clot in the right heart, and the lungs were pale. This could hardly have been the case if the pulmonary veins, pulmonary artery, or the thin walls of the left auricle, had been subjected to forcible compression. Moreover, after the first collapse passed off, the circulation was good and even strong. It is probable, therefore, that effusion into the mediastinum was first limited to the posterior portion, and that coagulation took place, temporarily arresting further escape. The thoroughly consolidated character of the clot in the mediastinum indicated that it was not formed at a late period in the case. Probably it continued to dilate slowly all the mediastinal spaces, and, since we found fluid in the chest twelve hours before death, it had even then begun to flow into the pleura. At length, after a change of position, a wider rent was made, a fuller current flowed in, and fatal syncope occurred.

The observation that the artery admitted of ready separation of laminæ in the middle coat, corresponds with Dr. Peacock's observations on that point.

A case, which constitutes in its rational signs a close parallel to the above, is cited in "Holmes's Surgery," from the "Transactions of the British Pathological Society," as follows:

"A man, aged fifty-one years, who had suffered for some time under symptoms referred to a diseased heart, with aortic regurgitation (to which one of his medical attendants, Dr. Latham, had added disease of the aorta), was seized suddenly one evening, as he was returning from a day of some exertion and excitement, with a very severe, tearing pain in the chest, instantly followed by a second agonizing pain, which seemed to dart from mid-sternum down the left of the spinal column, and only to be arrested a few fingers'-breadth below and to the left of the umbilicus, at which point of arrest the patient thought he heard a distinct crack. He lost power in both lower extremities at once. A bellows murmur was heard below and to the left of the umbilicus. The tearing pain recurred, and he then passed into a state of syncope, followed by great exhaustion and distress. Reaction set in next day with much congestion, greatly relieved by bleeding. He survived about three months, dying of dropsy and hydrothorax. The pulse had recurred feebly in the right femoral artery before death. The diagnosis of dissecting aneurism originating near the root of the aorta, and passing downward, so as to compress the channel of the vessel near its bifurcation, was made at the time of the seizure, and confirmed by dissection. A transverse rent was found in the arch of the aorta just below its three large branches, a clot of blood was impacted near the bifurcation of the artery, obstructing the left common iliac completely and the right partially."

Notes of Hospital Practice.

BELLEVUE HOSPITAL.

Subperiosteal Amputation of the Tibia and Fibula.—The patient upon whom this operation was performed entered the hospital suffering from an ulcer on an old stump. The history of the case was, that the patient had his leg amputated at the lower third. As a result of the operation, the anterior flap sloughed, leaving a cicatrix with an open ulcer over the extremities of the tibia and fibula, which showed signs of healing.

Dr. J. W. S. Gouley proposed to make a subperiosteal amputation of the bones, and in this manner compensate for the lost flap without the danger of a secondary amputation of the leg. The operation consisted in dissecting back all the tissues from the bones, and then separating the periosteum from them and reflecting it so as to leave an inch and a half of each of the bones bare. The exposed bones were then removed, the stumps being clothed by the periosteal flaps, and the whole being covered in by the soft tissues, forming a well-shaped stump. The case is doing well at present, being ten days from the date of the operation.

Dislocation of Acromial End of Clavicle.—When the patient entered the ward, a dislocation of the acromial end of the clavicle was detected. This was easily pressed into position, but, in order to keep it there, the arm had to be placed in Sayre's apparatus for broken clavicle, and a roller-bandage, with a pad over the extremity of the clavicle, so placed as to retain it firmly in position. After four weeks the apparatus was removed.

Luxation of Internal Lateral Ligament of Knee-Joint.—The patient entered the hospital suffering from rupture of the internal lateral ligament of the knee-joint. The interest of the case depends on the fact that it is a type of a class of cases where the diagnosis is liable to be confounded with fracture of the patella, particularly when the parts become swollen. The diagnosis mainly rests on the fact that in rupture of the ligament the support of the leg on that side is gone, allowing abduction, whereas in fracture of the patella this is not the case. The treatment consists in placing the limb in plaster-of-Paris dressing and keeping it there till union of the ligament takes place.

Erysipelas; Treatment by the Tar-Method.—The tar-treatment has been introduced, on the assumption that erysipelas is communicated by means of germs, and an antiseptic like tar would be the most reliable method of stopping its propagation. The manner of using it is to keep the whole of the erysipelatous portions of the skin covered with tar, and in this manner render inert the emanations. The results so far obtained tend to prove that it is deserving of a more extended use.

Cheloid Tumor attacking a Cicatrix.—The patient entered the hospital suffering from a cheloid tumor of the lower jaw, on the left side, extending down for about three inches. This was removed, and the wound healed by first intention. Six months after, the patient reëntered, suffering from alcoholism, and it was then found that the tumor had regained its original size, and attacked the whole of the cicatrix.

NEW YORK EYE AND EAR INFIRMARY.

Rupture of Choroid from Blow of a Stone.—An interesting and rare case of this injury recently came under the care of Dr. P. A. Callan, of the New York Eye and Ear Infirmary. The patient, a boy thirteen years old, received a blow from a stone in the right eye six weeks before applying to the institution for treatment. Immediately after the injury he was treated by a physician outside, but, as he obtained no benefit, he came to the infirmary.

On admission, the pupil of the right eye was found to be dilated, and it is to be inferred that it was so from the injury, as no drops had been used in the treatment of the case. His vision in the affected eye was found to be $\frac{20}{70}$, with complete loss of accommodation. No signs of external injury were noticeable, the conjunctiva and cornea being normal.

Ophthalmoscopic Examination.—*Media* clear; *optic disk* slightly injected. *Choroid* presented two exudations, one immediately below the disk, the other on the inner side. The most important changes were found in the macula lutea, and consisted of a longitudinal tear, one and a half diameter of the disk in length and a half one in width. This began over the region of the macula lutea, and extended in an oblique direction into the macula lutea, nearly as far as the yellow spot of Soemmering. This tear was widest at its middle, whitish in color, and bounded by a pigment border. It was crossed transversely by retinal vessels.

This injury is exceedingly rare. Mauthner, in his "Lehrbuch der Ophthalmoscopie," published in 1868, mentions only seventeen recorded cases. Two of them were Graefe's, one Schweiger's, three from Saemish's clinic, and other observers furnished the remainder. In all these cases the choroid alone was ruptured—as in the case just given—without the sclerotic being injured in its integrity.

PARK RECEPTION HOSPITAL.

Two Cases of Cut Throat; Recovery and Death.—The patient, a man of thirty-three years, while under a fit of temporary insanity, made an incision in his neck extending from the sterno-mastoid muscle on one side to the sterno-mastoid on the other. The incision nicked the carotid artery, but fortunately did not enter it. It extended backward, however, to the œsophagus, severing the larynx immediately above the thyroid cartilage. The treatment of the case consisted in keeping the wound open, and allowing it to granulate from the bottom. Fortunately the wound of the artery did not lead to rupture nor to aneurism. After three weeks the patient is doing well.

A case that fell under our own notice two years ago did not have such a fortunate issue, and was valuable in showing the bad results of injudicious treatment. The patient, in a fit of delirium tremens, made a deep gash in his throat, passing down to and involving the œsophagus and rings of the trachea on one side. No injury of the artery was detected, though, from the after-history of the case, it was to be inferred such did take place. He was seen by a physician outside, and treated by stitching up the wound after hæmorrhage had ceased. When we saw him in the hospital, four hours after, bleeding had returned with reaction, puffing the neck out and forcing the blood into the larynx. The sufferings of the patient from the dyspnœa were terrible, but promptly removed by opening the wound and relieving the tension. After this the patient did well for eleven days, when he died suddenly from hæmorrhage. The case, though unfortunate, teaches two valuable lessons, one not to sew up the wound, and the other to examine the vessels closely to see if they are injured, and, if they are, to consider well the surgery of them.

CHARITY HOSPITAL.

Transfusion of Blood in Anæmia by the Immediate Method.— The anæmia of the patient was brought about by a necrosis of the tibia seven inches in extent. Iron and other tonics failed to cause any perceptible improvement, and it was decided to try the effect of transfusion on him by the method employed by Dr. Joseph W. Howe, who performed the operation in this case.

The apparatus consists of an aspirator with tubes and needles so adapted as to transfer the blood from the donor to the recipient. The instrument is prepared for use by first placing it in a vessel of warm water, and putting into the barrel of the aspirator a solution containing ten grains of the carbonate of ammonia.

The patient was prepared by cutting down on the cephalic vein of the arm and exposing it.

The donor was similarly prepared, but, before inserting the needle, a bandage was tied around the arm tight enough to compress the veins but not the arteries. When every thing was ready, the needles were inserted into each patient, and six ounces of blood allowed to flow first into the instrument and then continuously injected into the patient. Immediately after the transfusion, the pulse became fuller, the appetite and strength increased, and continued so for one week, when anæmia again became noticeable. The patient now refused to have the operation repeated, on the ground that he might receive some disease with the transfused blood.

Dr. Howe has practised transfusion in this way on four cases, and so far without any bad results.

Correspondence.

To the Editor of the New York Medical Journal.

Sir: In your last number, I find Dr. Jacobi and myself arraigned by Dr. Hammond chiefly for our action as jurors in the McCormick inquest. Two other offending jurors are magnanimously pardoned by the doctor on account of their having addressed to him "manly notes" of explanation. I am loath to be behindhand in such an act of justice to Dr. Hammond, and I therefore promptly embrace the opportunity which his publication affords me of replying to his strictures upon my participation in the inquest. For this purpose, I beg that you will grant me the courtesy of a short space in your columns.

It appears that Dr. Clymer has stated in his letter that he imited his "expression of opinion entirely to the value of the esults in elucidating the pathogeny *or mode of origin of the disease.*" I am very glad that this interpretation is satisfacory to Dr. Hammond's wounded sensibilities, as it expresses perfectly my own view of the matter. The resolution which was indorsed by the majority of the jury, and at which Dr. Hammond somewhat gratuitously, it seems to me, takes offense, was very carefully worded so as to convey unequivocally the ery significance embodied in Dr. Clymer's statement. We ll know perfectly well what is meant by "pathogeny"—the erm is not so ambiguous as to require any explanation of its meaning. I am unable to perceive much distinction between the genetic process by which the disease is started," and "the tiology of the symptoms."

The letter and spirit of the resolution, in fact, conformed virtually to Dr. Hammond's own previous disavowal of having discovered any "*essential conditions*" in the case, such as had been attributed to him by the *New York Tribune.* In voting for that resolution, I expressly declared my own construction of its intent, and disclaimed any personal motive for my action. Although Dr. Hammond accuses me of hostility, he confesses himself unable to account for it, to which I answer that he need not trouble himself to account for what does not exist. I entertain for him the same feelings with which he is regarded generally in the profession. Our personal relations have invariably been pleasant. But I hope those relations will not be disturbed when I suggest to the doctor that his slurs upon Dr. Jacobi's nationality and competence in pathological knowledge are, in the first place, foreign to the subject, and, in the second, extremely injudicious. Dr. Jacobi needs no vindication; for his views, as expressed upon any medical subject, always rest on a foundation of exact scientific truth, or of logical deduction, which cannot be easily shaken, even by Dr. Hammond. And I am by no means aware that Dr. Hammond himself has contributed to the records of microscopical anatomy, pathology, or pathological physiology, as he singularly expresses it, any observations sufficiently original or valuable to constitute him an infallible authority in those most abstruse branches of minute investigation—branches in which very, very few are, or even pretend to be, masters.

I, for one, deny that the McCormick jury usurped their proper functions in returning a categorical reply to the coroner's direct question. That officer is obviously better versed in his duties and in his obligations to the public than Dr. Hammond, who even confesses his ignorance of the fact (with which every physician here ought to be acquainted) that a case of hydrophobia dying in this city necessarily comes within the scope of judicial inquiry. If the jury had been impaneled simply to pass upon the question whether McCormick died of hydrophobia, they would have done so immediately, as no one questioned the diagnosis. Their action was purposely postponed a number of weeks, principally in order that ample time might be given for *post-mortem* researches. They all acquiesced in such delay, and they all understood its object. A few days after the autopsy, it was announced in certain of the daily newspapers that Dr. Hammond had made some wonderful pathological discoveries in the McCormick case. It was, therefore, entirely proper that this idea on the part of the public should be either dissipated or confirmed by the jury's decision upon that portion of the coroner's charge relating to this subject. Said jury, including Dr. Hammond's particular friends, were unanimous in their officially recorded declaration as to the "*excellent and intelligent charge*" which was made to them by Coroner Kessler at the close of the testimony, and which certainly did not contemplate their adjournment *sine die* after having merely rendered a verdict of the cause of death.

Permit me now to give my own reasons for what, I trust, will be considered "an honest difference of opinion" as to the scientific value of Dr. Hammond's researches in determining the pathogeny of hydrophobia:

1. *Were they conducted with that extreme caution in the preparation of the specimens which would insure the certainty that genuine pathological appearances should be presented? Or was the demonstration of such appearances, under any conditions prescribed by distinguished microscopists, possible within "eighteen hours" after the autopsy?* Dr. Hammond asserts that his method is almost identical with that employed by Lockhart Clarke, and is sanctioned by Frey, but he avoids quoting those observers. In the 1868 number of the "Philosophical Transactions," of London, Lockhart Clarke describes the process which he had introduced in 1851, and which had become generally adopted in Europe and America. This consists first in placing the specimens in a solution (1 to 300) of chromic acid, to which is added a small quantity of bichromate of potash. *At the end of three or four weeks* the preparations are "in a condition fit for making thin sections." They are afterward treated with oil of turpentine to render them transparent. According to him, Gerlach employs the same time, but hardens them in a solution of bichromate of ammonia. In consulting "Das Mikroskop," by Dr. Heinrich Frey, upon this subject, I find another process of Lockhart Clarke's de-

scribed as follows: "He suspends his preparations for *several days* in alcohol diluted with an equal volume of water, afterward in pure alcohol *until thin sections are possible*—a time which, in the colder part of the year, is ordinarily reached after five or six days. Then each section is placed for one or two hours in a mixture of one part acetic acid, and three parts alcohol, *in order to render the gray substance clear*" (the *italics* are mine). Frey cites Lenhossek also as using the same process, but he himself regards alcohol as occupying the lowest place among the reagents. Both Frey and Dieters recommend a period of several weeks' preparation. The former employs the following language in speaking of observations upon the texture of the central organs, and the great difficulty of accurately describing them: "Many observers have certainly exaggerated the results of their investigations very much, frequently drawing very false conclusions from fragmentary, isolated appearances."

It thus seems, according to Dr. Hammond's own authorities, and others equally eminent, that from five or six days to several weeks are necessary even for a specimen immersed in pure alcohol, in order to render it fit for microscopical manipulation by the most experienced persons.

The foregoing considerations, more especially, led me to doubt that Dr. Hammond's observations, made upon specimens prepared for only *eighteen hours*, were capable of furnishing any exact scientific results. As he now states, however, that subsequent examinations of specimens submitted to a different process corroborate his first observations, it would be unbecoming in me to dispute their accuracy. Had the doctor made such statement in his testimony before the coroner's jury, he would have put an end to any question as to the reality of his pathological appearances.

2. Admitting, then, that the phenomena observed by Dr. Hammond were actually produced by morbid action before death, *did he demonstrate in any way that such phenomena bore a necessary relation to the disease of which McCormick died?* His brother testified that McCormick was addicted to the use of ardent spirits, and Dr. Hammond himself acknowledged before the jury that similar appearances to those which

he had observed might be detected in intemperate subjects. Moreover, it is well known that granular and fatty degeneration of the nerve-cells is not an uncommon pathological appearance, even in cachectic conditions of the system which lo not present any very definite symptoms.

3. Admitting that the lesions noticed by Dr. Hammond were consequences of rabific poison, *was any proof afforded hat such morbid changes were primary factors in developing he train of symptoms known as hydrophobia, and were not econdary lesions resulting from the terrible disturbance which his disease causes in the respiratory, vascular, and nervous ystems?* If the latter were the case, said phenomena could ssuredly be of no scientific value in determining the pathogeny of the disease, any more than are a thousand-and-one other morbid changes observed in various organs after death rom hydrophobia; and which are well recognized as being merely consequences of the affection.

I would here like to repeat substantially a few remarks pon this subject, which I wrote to another medical journal[1] ome two months since.

Notwithstanding Dr. Hammond's statement that the only ccurate microscopical examinations previously made in such ases had been two, reported by Dr. Allbut in 1872, there may be found, in the *Edinburgh Monthly Journal of Medical Science*, for 1850, a case described by Dr. Sidey, of that city –a very excellent observer—in which, *during a searching microscopical inspection of the brain and its membranes, the medulla oblongata, the spinal cord, and the eighth pair of erves in their origin and course, no abnormal appearances were detected.* Dr. Hammond is of the opinion that a result uch as this in his case would have been of some scientific alue in determining the pathogeny of the disease, but I must onfess that I cannot agree with him. Fleming, who, as Dr. Hammond has remarked, is the best authority on hydrophobia, says that more recently several microscopical examinations have been made, "*but beyond intense congestion nothing ould be noted.*" Now, Dr. Hammond has laid particular ress upon the fatty degeneration which he observed in the roots of the pneumogastric, hypoglossal, and spinal accessory nerves, and assumed that the appearances described by Allbut could have been nothing else than a different stage of the same morbid process. In Dr. Allbut's own account of his cases, however, he simply stated that there had been noticed throughout all the cerebro-spinal centres in different degrees, "little gaps caused by the disappearance of nerve-strands, which had passed through the granular disintegration of Clarke."

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[1] *See* the *Medical Record* of July 15, 1874.

Very extensive *post-mortem* researches have been made in cases of rabid dogs without any satisfactory results. According to Röll, a distinguished German authority, the cadaveric lesions observed in canine rabies offer a certain similarity to those which are the consequence of acute poisoning by narcotic substances. In this connection, I may say that I visited McCormick two hours before death, at which time he was, in my humble opinion, decidedly laboring under the narcotism of atropine, several large doses of which had been administered to him, as I was then informed by his attending physician, Dr. Hadden. In this perhaps erroneous conclusion, my friend Dr. Allan McLane Hamilton (no mean authority in such matters), who accompanied me, concurred.

Dr. Bruckmüller, the eminent Professor of the Veterinary Institute of Vienna, published in 1869 an elaborate account of very careful examinations undertaken by him upon three hundred and seventy-five mad dogs, during a period of twenty years. The principal brain-lesions which he observed were as follows: extravasation of blood into the brain-substance, three cases; hyperæmia of brain, twenty-six cases; œdema, usually accompanied by softening of membranes, seventy-four cases; hydrocephalus, thirty-seven cases. The conclusion that Bruckmüller arrived at, after his long and attentive researches, was, that no autopsical appearances in the dog prove *of any value* in defining or distinguishing the disease.

I am afraid that, as yet, we must accept similarly unsatisfactory conclusions in the human affection, and agree with Trousseau that, in the majority of instances, the pathological changes thus far found after death by hydrophobia are principally those dependent on the asphyxia which occurs in the latter stages.

Yours, very respectfully,

CHARLES P. RUSSEL.

NOTE.—Since writing the above communication, I find that Dr. Hammond has been obliged to abandon his claim of priority in "microscopic investigation of the brain and spinal cord on this continent, in the case of a person dead of hydrophobia." It appears that Dr. Edward Pepper preceded Dr. Hammond in such inquiry, but obtained only "negative results." Dr. Hammond, in mentioning this case, endeavors to force his readers into the belief that the "majority of the coroner's jury" regarded alcohol as the cause of the changes which he had announced. I myself certainly entertained no such impression, as I conceived that the parts inspected had been submitted to the action of absolute alcohol *for too short a time to enable it to exert upon the tissues an influence sufficiently positive to render them fit for microscopical manipulation.* This important point has been studiously avoided by Dr. Hammond.

It is possible that, when other portions of the "continent" can be heard from, more antecedent cases of microscopical researches in hydrophobia, "with negative results," may be reported. Such instances would appear conclusive that even if granular or fatty degeneration of the nerve-cells does sometimes exist, it is an occasional, secondary, and non-essential lesion, and is, therefore, *of no scientific value in determining the pathogeny of the disease.* C. P. R.

NEW YORK, *September* 15, 1874.

TO THE EDITOR OF THE NEW YORK MEDICAL JOURNAL.

DEAR MR. EDITOR: The last number of your valuable JOURNAL contains, among many more appropriate subjects, an unprovoked attack upon me, my knowledge or rather ignorance, my nationality, and my animus. What do you expect me to do now? I must not prove that I am in possession of text-books from which to quote the origin of some nerves, and the most frequent microscopical changes undergone in a number of pathological conditions[1]—it is superfluous, I think.

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[1] "I ascertained the existence of granular and fatty degeneration of the gray substance and of the nerve-roots, together with nuclear proliferation of the neuroglia cells of the white substance."—NEW YORK MEDICAL JOURNAL, p. 264.

I must not swagger—it is ungentlemanly. I must not fly into a passion—it is not a wholesome exercise. I must not sue you for damages—you may, just at present, be averse to sparing the half million which I should desire to relieve you of. After all, I think I shall act on the principle that Willie must be forgiven, as Willie is the bigger of us two; and that my reviewer is bigger than I, he has himself stated, with all the pompous dignity of offended innocence and the modest self-assurance of an unassailable oracle, and, by so stating, proved with surprising logic, that no member of the majority of the jury knows any thing about microscopy and histology, and that he has "yet to learn that they are qualified." Still, he may learn yet, as he does learn very fast; a proof of which you may find in the following:

You read on page 265: "It was very apparent to me, during the course of my examination before the jury, that one of them at least (Dr. Jacobi) had somehow or other imbibed the notion that the changes were the consequence of the action of the alcohol which I had used as a hardening agent. The absurdity of this idea will be apparent when I state that my process was almost identical with that employed by Lockhart Clarke in his studies of the constitution of the nerve-centres, that it is one sanctioned by Frey, and that I have employed it for many years in the examination of diseased nerve-tissues."

Now, Mr. Editor, the facts connected with this matter are these: Toward the close of the examination of the witness, Dr. Hammond, I asked him, briefly and politely, these questions: Could the changes which you report to have found, and represent on these drawings, have been produced by your mode of treating the specimen, that is by alcohol? Witness said, literally, Oh yes, they might. Second question: Could alcohol produce the same changes in healthy tissue? Answer, Oh yes, that is quite possible.

Am I right in saying that witness is apt to learn very fast, when, what he pronounced possible one day, was an "absurdity" a short time after? Does the warmth of his expression remind you, or not, of the genuine or feigned fanaticism of converts in religion, who are said to be the bitterest enemies and persecutors of their own former faith? And is it safe to discuss scientific questions seriously with an antagonist whose answers and convictions are subject to be changed in a few weeks even to the degree of such "employment, for many years, of alcohol in the examination of nerve-tissue?". After all, he may, at present, "defy any juryman of the majority to produce, by any degree of maceration in alcohol, such changes in the brain, medulla oblongata, or spinal cord, as he has detected." The jury, however, could not, from his answers to my simple questions, conclude that he had employed this method for many years, and always succeeded in obtaining reliable results; on the contrary, the jury imbibed the notion that Dr. Hammond meant just what he answered.

At this point, Mr. Editor, let me state a fact. The verdict of the jury, in spite of the attempt to induce us to eulogize Dr. Hammond for his alleged discoveries, did not imply an expression of distrust of Dr. Hammond, his methods, or results. He has himself invited the expression of such distrust, if it existed. As this is so, I must confess that I do doubt the possibility of a satisfactory examination of a medulla oblongata and spinal cord, which had remained in alcohol only two days, or less. Lockhart Clarke (and Frey), to whom our histologist refers, hardens nerve-tissue, in winter, five or six days at least, and then only proceeds to the final steps of staining with carmine, etc. As Dr. Hammond has neglected to refer to his authorities any further than by mentioning names, let me add that his quotations might be more full and more correct. I beg of you, Mr. Editor, to compare Lionel S. Beale, fourth (London) edition, 1868, p. 145;[1] Frey, "Das Mikroskop und die mikroskopische Technik," fourth edition, Leipsic, 1871, p. 203.[2] You will, by so doing, find that Dr. Hammond happens to misquote his authorities, and misstate their methods.

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[1] "In summer, the cord, however fresh when immersed in the spirit, remains more or less spongy, *instead of becoming firm and dense in the course of five or six days.*"

[2] "Lockhart Clarke, who was imitated by Lenhossek, has for many years employed the following method: The fresh spinal cord is hardened in equal parts of alcohol and water on the first day, in pure alcohol afterward, until thin sections can be made. *This result is generally obtained, in the cold season, after five or six days.* After this, a mixture of one part of acetic acid and three parts of alcohol is added for an hour or two," etc.

If Dr. Hammond wished to disarm distrust, and prove his capacity for mastering any difficulties which stood in the way of that remarkable report, published within a few days in a daily paper, he might have presented his specimens to the jury whom he himself calls his colleagues. Let me remind Dr. Hammond—he must excuse me for alluding to a European custom—that in scientific societies of Europe a scientific discovery is invariably controlled by the criticism of an examining committee before it is given to the public. No such thing occurred here. It is a peculiar custom with us Americans to refer to a jury—not always even of medical men—questions that ought to be answered by specialists. Usage has sanctioned this custom so far; moreover, it was justified, perhaps, by the non-existence of any more formally-appointed scientific committee, perhaps also by the most extreme informality offered by the publication of uncontrolled alleged discoveries in a daily newspaper, and finally, as far as Dr. Hammond is concerned, by his willingness to testify before the jury.

But the jury's verdict he dislikes.

I do not find fault with him for that. But we were not charged to say pleasant things—true or false—of anybody, but simply to state our conviction. If Dr. Hammond had specimens to show, why did he not present them before the (medical) jury, as many weeks afterward he proposed to show them before the Neurological Society? Are drawings proofs? Must they be necessarily correct? Do they depend, or not, on individual skill? May they even be, or not, the result of imagination, like ever so many outbursts of professional poetry met with in the reports of wonderful cases, and still more wonderful cures? May a juryman, with all the responsibility of office and oath upon him, be permitted to doubt? If the great number of resolutions kindly prepared for our signature by the foreman of the jury, and heaping upon the alleged scientific discoveries and their author all the eulogizing epithets which would have sounded better from the lips of enthusiastic young students replete with awe and ignorance, had been signed by us—under oath—would he still be of the opinion that both coroner and jury had overstepped their rights and duties? And does he not know, as the informers have busied themselves about his ears, that the "motion to adjourn *sine die*" was put and lost long after the string of eulogies had been voted down, with all the scornful contempt which one of the gentlemen, who are at present admired for their "manliness," could crowd into his scathing words of condemnation?

Hardly: for the readiness with which he proposes to exculpate two of the members of the jury, because of "manly" notes addressed to him, proves the standard by which Dr. Hammond measures the justifiability of the expression of an honorable man's mind in the performance of public duties. That those gentlemen have spoken differently in the jury-box and in their notes, I am not quite ready or anxious to believe. Besides, if ever the motives or inducements connected with those notes should become publicly known, we may expect a rich contribution to the coining of "golden opinions."

It is true, I have written no "manly note" to excuse or explain my verdict. Neither the coroner, nor the foreman of the jury, required me to do so. Therefore, my motive in voting with the majority is sheer animosity. And the reason of my animosity? The professor of nervous derangements finds it in the fact that he is not a "German." My reply is —as he is in the "denying" and "defying" mood—only this one, that, after having been a member and close observer of the New York medical profession for twenty-one years, I "deny" and "defy" his power to rouse the spirit of a narrow-minded nativism.

Besides, how does he come to know of the secret proceedings of the jury? And, if he learned them from officious informers, who had no right to divulge them, how did he permit his shrewd judgment to be so clouded as to take notice of them? The undisputed fact about my "animosity" is this, that, beyond a general statement of my views, my remarks were few and measured, though positive, and not dictated by animosity or ill feeling. Dr. Hammond does not appear to comprehend that, even if he had a prejudice against a person, an honorable man would rise above personalities in the performance of public duties.

When the amiable, frank men came with their reports and apologies, did it not occur to him that a report which implied a violation of confidence ought not to inspire confidence? And, as he is so absolutely convinced of his being right and our being wrong, does he not know that "Heaven itself prepares good men with Crosses?" And could he not take and bear his cross in silence, and the consciousness of innocence? That would, indeed, have been a dignified rebuke to animosity and ignorance.

But Dr. Hammond willed otherwise. His offended sensitiveness excited his vaso-motor nerves, and stimulated the vessels of his gray substance into anomalous circulation, and his cerebral cells into emotional hyperæsthesia—and he rashly rushed into publicity. Yours very meekly,

A. Jacobi.

110 West Thirty-fourth Street.

Cold Spring, N. Y., *September* 15, 1874.

Editor New York Medical Journal.

Sir: There is such a marked absence of both argument and proof in the somewhat lengthy attack of Dr. Rogers on the hypodermic method of administering quinine and other remedies, published in the September number of the New York Medical Journal, that I deem no formal reply necessary, but will merely explain a little more fully the method I employ.

The mode of preparation for my solution is as follows: ℞. Quiniæ disulphatis, grs. cccc; acid. sulphuric., ♏. xxxij. Rub up the quinine and acid, which latter should be evenly distributed over the quinine, *very thoroughly*, until the two are *intimately* and *uniformly incorporated together*, if it requires an hour. Place, in a porcelain dish, over a spirit-lamp, add distilled water fl ℥ viij, stir with a wooden spatula until the solution becomes clear. Filter through paper into a bottle, and add: ℞. Acid. carbolic. liq., alcohol., āā ♏. xvj. This solution should remain clear, and free from crystallization, at ordinary temperatures, for any length of time.

I see that more concentrated solutions are being offered to the profession, notwithstanding my numerous experiments showing the inconveniences produced by them. This is notably the case with one recommended by a well-known chemist quite recently, of which a fluid drachm contains thirty grains of quinine and eight minims of c. p. muriatic acid. Making allowance for the different proportion of water in the sulphuric and muriatic acids, about forty and sixty per cent. respectively, his solution contains about three times as much acid to a given amount of quinine as mine. Even if we could get a larger amount of quinine in the solution with the same amount of acid, I doubt, from the result of my experiments, if it would be wise. With the present solution I can introduce a drachm at *one point* without inconvenience, and thus twelve grains of quinine may be given with only two punctures; and, if necessary, this may be repeated, day after day, without injury, and with but very slight inconvenience to the patient.

I may add, for the benefit of those who may be alarmed by Dr. Rogers's statements, if there are any such, that, of the last one hundred and fifty, or perhaps two hundred injections (for I keep no record now), used by Dr. Murdock, and other gentlemen who occasionally assist me, and myself, not one, to my knowledge or belief, has been followed by any inconvenience beyond a slight, temporary soreness; and the operation, if done slowly, stopping, for a few seconds, if smarting should be complained of, is of the most trivial character. In the very last case, the most obstinate malarious fever I have seen, I injected three days ago two syringefuls of my solution; and to-day, desiring to inject in a different arm, and forgetting the arm on which I had before operated, I asked the patient, and neither he nor I could find evidence enough, by feeling the two, to satisfy us.

While on this subject, Mr. Editor, will you permit me to correct a *canard* which has been going the rounds of the daily papers in New York, which originated here, to the effect that there were fifteen hundred cases of fever here at one time? I am anxious that the medical public at least should be correctly informed on this point. The absurdity of the report will appear at once from a statement of the fact that the population of Cold Spring, and the adjoining village, Nelsonville, is only about thirty-five hundred; and that, out of some three hundred and fifty men employed in the West Point Foundry, situated in the most malarious locality, scarcely fifteen are off work, at any one time, from the effects of malaria. I deem it my duty to say this much, as my frequent allusions, of late, to the treatment of malaria, and the large number of cases referred to in my article in this JOURNAL, might seem to corroborate somewhat the above gross exaggeration.

FREDERIC D. LENTE, M. D.

NEW YORK, *September* 14, 1874.

EDITOR NEW YORK MEDICAL JOURNAL.

APROPOS of Dr. Rogers's article on the "Hypodermic Use of Quinine," in the August issue of your JOURNAL, I would state that I have had opportunity to examine two cases where Dr. Lente had used the hypodermic:

CASE I. *Pneumonia, complicated by Malaria.*—Twenty-seven grains of quinine had been given during the preceding twenty-four hours; the temperature, however, steadily rose till, at the time of the doctor's visit, it was 105½° Fahr. Four syringefuls (12 grs.) of Lente's solution were injected in the right arm. Two days afterward no pain, swelling, or redness perceptible, and careful examination was necessary to determine which arm was injected last.

CASE II. *Intermittent Fever; Type irregular.*—One drachm, followed on the third day by one drachm more, of Lente's solution, was injected.

Both of these cases observed for one week, and no bad effects were apparent.

ROBERT A. MURRAY, M. D.,
House-Physician, Bellevue Hospital.

Proceedings of Societies.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, September 9, 1874.

DR. GURDON BUCK, presiding.

IN absence of the President, Dr. Gurdon Buck was chosen to take the chair.

Necrosis of the Lower Jaw in an Infant.—Dr. POST presented several specimens of dead bone taken from the lower jaw of an infant. The point of interest about the case was, that the buccal cavity was not involved. An incision was made below the jaw, and the necrosed bone removed without entering the buccal cavity.

Calculus; Bilateral Operation.—Dr. POST also presented a calculus, weighing half an ounce, removed from the bladder by means of the bilateral operation. He used in this case, as he did in a previous one, Sims's rectal dilator. Much less injury to the neck of the bladder occurs by the use of this instrument than when a rough stone is dragged through it.

Lipoma.—Dr. POST showed a specimen of lipoma removed from the shoulder over the region of the deltoid. The patient had the disease for about eighteen years. It was removed by an elliptical incision. Union took place by first intention. Dr. Post was of the opinion that this result was obtained in great part by the use of numerous fine sutures so applied as to bring the edges into close apposition. No carbolic-acid dressing was applied.

In answer to Dr. Buck, Dr. Post said the disease could not be explained by the occupation of the man.

Suspected Embolic Abscesses followed by Cerebro-Spinal Meningitis and Death.—Dr. A. JACOBI presented a specimen of brain and spinal cord, together with a portion of the thorax, from a man, with the following history:

The patient, a young man, entered Mount Sinai Hospital about a year ago, suffering from intermittent fever, of which a prominent symptom was severe headache. The spleen was very much increased in size. He was placed under the use of quinia, but without any decided relief to the headache, or any marked diminution in the size of the spleen. Upon a closer examination, cardiac disease was discovered, which accounted for the continuance of both symptoms. Shortly after this, Dr. Jacobi detected a fluctuating tumor in the vicinity of the tenth rib, and another over the tenth and eleventh dorsal vertebræ. Another tumor made its appearance between the fourth and fifth ribs, but did not fluctuate.

The tumor over the tenth rib was opened and the pus evacuated, and it was now discovered that the non-fluctuating tumor between the fourth and fifth ribs was also an abscess, and communicated with the one below. In the operation, a portion of the rib was exsected to allow of the free discharge of pus. Some months after, a similar method was practised over the region of the upper tumor. Following these two operations, a third one was had recourse to over the tenth and eleventh vertebræ. In the operation a portion of the spine of the vertebræ was removed, and accidentally a minute opening was made into the meninges, allowing some of the cerebrospinal fluid to escape.

For three days after this, the symptoms improved very much, and Dr. Jacobi was of the opinion that the injury to the meninges would be insignificant, but on the fourth day the temperature rose to 104°. On the fifth day the patient appeared drowsy, and on the seventh died, with marked signs of meningitis of brain and spinal cord. Several months before the operation on the vertebræ was performed, pleuritis developed, and rendered the case still more unpromising.

Autopsy.—Brain and spinal cord showed marked signs of meningitis, with effusion of lymph. This was quite evident in the specimens presented, though they had been for some time in alcohol.

The portion of the chest-wall showed that no signs of new formation of bone had been attempted at the points where exsection had taken place. A probe could be easily passed between the upper and lower openings, showing free communication. The vertebral abscess extended down the side of the vertebral column, and was in connection with the other two.

Dr. Jacobi was not satisfied that the inflammation of the brain and spinal cord was entirely due to the operation, as the injury was slight. In operating for spina bifida, much greater interference takes place in the relation between spinal and cerebral fluid, and there is seldom any danger. He was of the opinion, also, that the abscesses were caused by emboli from the heart, for otherwise it would be difficult to explain their presence.

Necrosis of Head of Femur; Removal.—Dr. Finnel presented a specimen of necrosed bone taken from a boy, with the following history:

Ten years ago, saw the boy, who was then suffering from necrosed bone, the result of a synovitis of the hip-joint, which could be traced directly to an injury.

Notwithstanding the fact that the probe detected the dead bone at that time, the friends refused to have an operation performed. After ten years had passed, an operation was obtained. The patient now showed much deformity. Seven sinuses were found around the joint.

About an inch of the neck was removed at the operation, and now the patient is comparatively well. The shortening is about two inches.

Dr. Post thought the case was of considerable interest in showing the dangers to which a patient suffering from hip-disease may be exposed.

Cirrhosis of Liver.—Dr. Messinger presented the liver of a patient who had the following history:

He had been exceedingly healthy until last December, and was then about forty-three years of age. Parents also healthy. First signs of disease developed last December, when the patient became jaundiced. Early in January, developed cough of a spasmodic character. After three or four weeks, liver enlarged perceptibly, and jaundice, which had faded, returned.

With this, ascites came on, increasing in quantity to such an extent that he had to be tapped several times. Eventually anasarca appeared, and the patient died.

In the treatment of the case, most benefit was derived from the use of elecampane, scoparium, and other vegetable diuretics of this class.

The patient had always been an exceedingly heavy drinker of brandy, though he never showed any signs of drunkenness, and, although the doctor had known him for years, he never suspected him to be an inebriate.

The liver, which was presented, was not much changed from the normal size, but an examination showed evidences of cirrhotic disease.

Ovarian Fluid.—Dr. Sell presented a specimen of ovarian fluid removed from a patient, in which he had observed all the anatomical elements noticed by Spencer Wells.

Bibliographical and Literary Notes.

Art. I.—*The Physiology of the Circulation in Plants, in the Lower Animals, and in Man: being a Course of Lectures delivered at the Surgeons' Hall to the President, Fellows, etc., of the Royal College of Surgeons of Edinburgh, in the Summer of* 1872. By J. Bell Pettigrew, M. D., F. R. S., F. R. S. E., F. R. C. P. E., etc., etc. Illustrated by One Hundred and Fifty Engravings on Wood. 8vo, pp. 329. London: Macmillan & Co., 1874.

The author of the treatise before us seems to dig to the very bottom in searching out the physiological processes of which he treats, and has written a very complete treatise upon the subject of the circulation. Commencing with the anatomy of the circulatory apparatus of plants, and following with his views of the methods in which the circulation is carried on, the author prepares us to appreciate the analogy between the circulation in plants and that in animals, and between that in animals and that of man. Interesting as are the author's descriptions in the several points involved, we must content ourselves with noticing two or three of the questions, and his views thereon, which may interest the general reader.

As regards the mechanism of the circulation in plants, we are told (p. 28): "It is not a little humiliating to think that, at the very threshold of the circulation, we are confronted with difficulties of such magnitude, and obliged to confess that, even in a cell, there are hidden powers which neither the microscope, physics, nor chemistry, can as yet explain. From experiments which I have made recently, and which are fully described further on, it appears to me that the intracellular circulation is due in a principal measure to physical causes, such as absorption and evaporation, exosmose and endosmose, capillarity, chemical affinity," etc.

The rotations of the protoplasmic contents of cells, which exhibit such a marked resemblance to those of the protozoa, are supposed by some to depend upon the existence of ciliary processes. The author says (p. 33): "If cilia could be proved to exist on the lining membrane of the cell-wall of plants, or on the exterior of the moving particles, much of the mystery of gyration would disappear. Until, however, these are discovered, we must fall back upon other forces, and of these I believe *absorption* on the one hand, resulting in endosmose and exosmose, and *evaporation* on the other, to be the chief."

The author, however, does not seem entirely to discard the *vital* theory in the explanation of the intracellular circulation, for he says, on pp. 37, 38: "That the vitality of the plant is also concerned in the production of the intracellular circulation, is rendered all but certain by its occurring only in the active living cells which are engaged in building up the plant, and by ceasing if the part of the plant in which it occurs is injured.

"That cells are endowed with vitality, and that this of itself is capable of setting inert matter in motion, is proved by the fact that some of them in the lower tribes of plants move about in a liquid medium; the oscillations advancing with an undulating motion. . . .

"If we accord the power of motion to an entire cell, we shall have difficulty in resisting the conclusion that it also regulates the movements occurring within itself. . . . Suffice it to say, that the vital, physical, and chemical phenomena witnessed in plants are due primarily to operations occurring in the interior of cells; the function of nutrition, reproduction, etc., necessitating movements in certain directions."

In the exceedingly interesting portion of the work describing the action of the heart, the author seems to be nearly in accord with Flint when he says: "The heart differs slightly from the blood-vessels, inasmuch as, when it closes, all its diameters are shortened; whereas, when it expands, all its diameters are elongated."

The dilatation of the organ is said to be a *forcible expansion* of itself, as much as its contraction is a forcible closing. The analogy between the movements of the thorax, abdomen, and heart, is well discussed.

We will quote the author's view concerning the two theories entertained by physiologists respecting the action of the mitral and tricuspid valves. One sect, it may be remembered, maintain that the valves are acted upon mechanically by the blood; the other believe that their movements are due to contraction of the musculi papillares. The latter is known as the *vital theory*. The author states (p. 274):

"I have to express my conviction that both theories (conflicting though they appear) are virtually correct so far as they go, but that neither the one nor the other is sufficient of itself to explain the gradual, and to a certain extent self-regulating process by which the auriculo-ventricular valves are closed and kept closed. On the contrary, I believe that the closure is effected partly by *mechanical* and partly by *vital* means. In other words, that the blood toward the end of the diastole and the beginning of the systole forces the segments in an upward direction, and causes their margins and apices to be so accurately applied to each other as to prevent even the slightest regurgitation; whereas, during the systole, and toward the termination of that act, the valves are, by the shortening of the musculi papillares, dragged down by the chordæ tendinæ into the ventricular cavities to form two dependent spiral cones."

The work is replete with interesting discussions and descriptions, and is quite original in design.

Art. II.—*The Medical Register and Directory of the United States, systematically arranged by States: comprising Names, Post-Office Address, Educational and Professional Status of more than Fifty Thousand Physicians, with Lists of Medical Societies, Colleges, Hospitals, and other Medical Institutions, with Abstracts of Medical Laws of each State, Notices of Mineral Springs, etc.* By Samuel W. Butler, M. D. Philadelphia: Office of the *Medical and Surgical Reporter*, 1874.

This volume is the result of several years of troublesome work and inquiry. It is far from being complete, but it is certainly a large and valuable list of practitioners of medicine, and forms a good foundation for a fuller work in the future. The labor of obtaining exact and reliable information for such a purpose in so large a country as the United States is very great indeed, and we are rather surprised that Dr. Butler and his successors were able to do so well as they have done. The value of the work is chiefly to advertisers and business-men who wish to communicate with a large number of practitioners, regardless of school or standing.

Art. III.—*The Causes and Treatment of Deafness; being a Manual of Aural Surgery, for the Use of Students and Practitioners of Medicine.* With Illustrations. By James Keene, Fellow of the Royal College of Surgeons of England, Member of the Royal College of Physicians of London, Assistant-Surgeon to the Central London Ophthalmoscopic Hospital, etc., etc. London: Robert Hardwicke, 192 Piccadilly, 1873. Pp. 180.

This small volume is, as the author tells us, designed "for the use of the student and busy practitioner." It is in fact as well as name only a manual, and does not enter at all into the minutiæ of any of the diseases of which it treats. It is divided into two parts.

Part I. treats of the methods and apparatus employed in the practice of aural surgery, and Part II. of special diseases.

The book is well written and is very readable, but to one at all familiar with the subject nothing is to be learned from it. It is undoubtedly better that "the student or busy practitioner" should read this book than not to read any at all; but he had far better take more time, and read a more complete treatise. There are four good plates at the end of the book.

Art. IV.—*The Nature and Treatment of Venereal Disease; with Numerous Cases, Formulæ, and Clinical Observations.* By Robert A. Gunn, M. D. 8vo, pp. 182. New York: Asa K. Butts & Co., 1874.

From the examination we have given this work we are led to the conclusion that it possesses but little practical merit. The author believes there is but one venereal virus, which under different conditions gives rise to either gonorrhœa, chancroid, or syphilis. He also discards mercury in the treatment of syphilis, and recommends certain vegetable remedies, as poke-root (phytolacca decandra), and podophyllin, although the iodide of potassium is admissible in certain cases. "Kennedy's extract. pinus canadensis" is recommended as a local application in ulcerous affections.

We know not who the author is, but the work as a whole suggests its being the production of a second-rate eclectic physician, although he says he has adopted his special views from a large experience in treating venereal disease.

Art. V.—*Nomenclature of Diseases; prepared for the Use of the Medical Officers of the United States Marine-Hospital Service.* By the Supervising Surgeon, John M. Woodworth, M. D. Being the Classification and English-Latin Terminology of the Provisional Nomenclature of the Royal College of Physicians, London. 8vo, pp. xxiv.–210. Washington: Government Printing-Office, 1874.

The title of this little volume tells about what it is. In addition to the nomenclature adopted by the Royal College of Physicians, as copied by Aitken in his "Science and Practice of Medicine," the editor has introduced definitions and Latin synonyms. A list of contents is given, and a copious index closes the volume.

Books and Pamphlets Received.—The Complete Hand-Book of Obstetric Surgery: or Short Rules of Practice in Every Emergency, from the Simplest to the most Formidable Operations connected with the Science of Obstetricy. With numerous Illustrations. By Charles Clay, M. D., late Senior Surgeon and Lecturer on Midwifery in St. Mary's Hospital, Manchester. From the third London edition. Philadelphia: Lindsay & Blakston, 1874.

Surgical Emergencies; together with the Emergencies attendant on Parturition, and the Treatment of Poisoning. A Manual for the Use of General Practitioners. By William Paul Swain, F. R. C. S., Surgeon to the Royal Albert Hospital, Devonport. With Eighty-two Illustrations. Philadelphia: Lindsay & Blakiston, 1874.

Quarantine: General Principles affecting its Organization. The Transmissibility of Yellow Fever and Cholera in their Relation to Quarantine. Read before the New York Academy of Medicine. By S. Oakley Vanderpoel, M. D., Health Officer of the Port of New York, etc.

The Pathology and Treatment of Diseases of the Ovaries; being the Hastings Prize Essay of 1873. By Lawson Tait, F. R. C. S., Edinburgh and London; examining Surgeon to the Birmingham and Midland Hospital for Women, etc., etc. London: Smith, Elder & Co.

A Practical Treatise on the Diseases of Women. By T. Gaillard Thomas, M. D., Professor of Obstetrics and Diseases of Women and Children in the College of Physicians and Surgeons, New York; Surgeon to the New York State Woman's Hospital, etc., etc.

An Inquiry into the Value of the Signs and Symptoms regarded as diagnostic of Congenital Syphilis in the Infant. By Thomas Ballard, M. D., President of the Harveian Society of London, etc., etc. London: J. & A. Churchill, 1874. Pp. 23.

The Ophthalmoscopic Appearances of the Optic Nerve in Cases of Cerebral Tumor. By C. E. Fitzgerald, M. D., Ophthalmic Surgeon to the Richmond Hospital, etc. Reprinted from the *Dublin Journal of Medical Science*, June, 1874.

The Toner Lectures. Lecture III. On Strain and Over-Action of the Heart. By J. M. Da Costa, M. D., Professor of Practice of Medicine in Jefferson Medical College, etc. Washington: Smithsonian Institution, August, 1874.

A Treatise on Food and Dietetics, Physiologically and Therapeutically considered. By F. W. Pavy, M. D., F. R. S., Physician to and Lecturer on Physiology in Guy's Hospital, etc., etc. Philadelphia: Henry C. Lea, 1874.

Twenty-second Annual Announcement of the Medical Department of the University of Vermont and State Agricultural College, Burlington, Vt., for the Year 1875. Springfield, Mass., 1874.

Experimental Researches on the Physiological and Therapeutic Action of the Phosphate of Lime. By L. Dusart, ex-Interne des Hôpitaux de Paris. Second edition. Paris.

Annual Report of the Commissioners of Quarantine of the State of New York. Transmitted to the Legislature, January 6, 1874. Albany, 1874.

Cocain, Veratria, and Gelsemium. Toxicological Studies. By J. Ott, M. D., Eastern Pennsylvania. Philadelphia: Lindsay & Blakiston, 1874.

Transactions of the Kentucky State Medical Society. Nineteenth Annual Meeting, held at Shelbyville, Ky., April, 1874. Louisville, 1874.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, at its Seventy-fifth Annual Session. Baltimore, 1874.

Thirty-third Annual Announcement of the St. Louis Medical College. Winter Session, 1874–'75, and Catalogue for 1873–'74.

Second Annual Report of the Board of Health of the City of Boston, 1874. Boston: Rockwell & Churchill, 1874.

On the Nature and Curability of Pulmonary Phthisis. By William Gleitsmann, M. D. Baltimore, 1874.

Transactions of the Michigan State Medical Society, for the Year 1874. Lansing: W. S. George & Co.

Annual Announcement of the Savannah Medical College, Session of 1874–'75. Savannah, 1874.

Transactions of the Medical Society of the State of West Virginia. Wheeling, 1874.

Translations.

Acetic Acid in Mucous Polypus.—Dr. Méplain, of Moulins, gives the history of a man, thirty years of age, who had been afflicted for a month with mucous polypus of the velum palati. The tumor was growing rapidly and impeded deglutition and speech, and gave rise to considerable hæmorrhage. Applications of chromic and carbolic acids, removals with scissors, etc., afforded no relief, the tumor being constantly reproduced. A drop of acetic acid was injected into the polypus and it immediately began to shrink, a second injection completed the cure, and five months later there were no symptoms of a return of the disease.—(*Bull. de Thérapie* and *Gazz. Med. Ital. Prov. Venete*, No. 9, 1874). G. R. C.

Treatment of Lupus and Lupus Erythomatosus. — Dr. E. Veiel, in Canstatt (*Archiv f. Dermat. u. Syph.*, v., 2, 1873), treats this according to the method proposed by Volkmann: multiple punctate scarifications immediately followed by the cauterization of the diseased portions with a solution of chloride of zinc (chlor. zinc and alcohol in equal parts). The scarifications are made with an instrument composed of six lancets lying parallel to each other. The cauterization results in a scab, which falls off in from six to ten days, after which the treatment is repeated according to necessity. From six to eight scarifications were usually sufficient to effect a cure. As a rule, the treatment is much prolonged in simple lupus, as the cauterization gives rise to ulcers, which must be treated by the application of a dilute solution of chloride of zinc. In addition, cod-liver oil and arsenic are administered, thermal baths, and in the after-treatment the mercurial plaster of Hebra. E. F.

A Case of Intoxication by Coffee.—H. Curschmann (*Deutsche Klinik*, 1873) communicates a carefully-observed case of coffee-poisoning occurring in an anæmic woman, who, believing herself pregnant, used an infusion of 250 grammes of coffee in 500 grammes of water as an abortive remedy. About two hours afterward she was somewhat unconscious, the countenance was very pale and had an anxious expression, considerable tremor in the limbs, much subjective dyspnœa, with quick, labored respiration and normal condition of the lungs, a very frequent and tense pulse; frequent stools with tenesmus, increased secretion and discharge of urine with diminished specific gravity. Under the influence of morphine the patient quickly rallied, and had recovered three days after the poisoning.—*Centralblatt f. d. Med. Woch.*, 56, 1873. E. F.

Fracture after Resection.—A case of fracture at the point of union of the ends of the bones after resection of the knee-joint is described by Dr. E. Ried (*Oestr. Zeitsch. f. Chirurg.*, 2, 6). It affords additional interest from the fact that the fracture healed at the point of resection like an ordinary subcutaneous fracture. E. F.

Miscellany.

Appointments, Honors, etc.—Dr. Weir Mitchell's work on "Injuries of the Nerves" has been translated into French by Prof. Vidian. Prof. James P. White, of Buffalo, has been elected Honorary Fellow of the New York Academy of Medicine. Dr. D. H. Kitchen has been appointed Chief of Staff of Charity Hospital, in the place of Dr. McDonald, who has been transferred to the City Asylum, Ward's Island. Dr. C. F. Folsom has entered on the duties of his office as Secretary of the Board of Health of Massachusetts. The Medical Society of Virginia will meet in Abingdon on the 13th inst. Prof. Erichsen arrived in Canada August 10th. Prof. Drake has been obliged, on account of ill health, to relinquish the active duties of the chair of Physiology in McGill College, Montreal. Dr. William H. Bunker has assumed the superintendency of the Long View Asylum, Ohio. Dr. Catlett has been appointed Superintendent of the New Missouri State Asylum, St. Joseph.

Dr. Ferrier has been elected Assistant Physician to King's College Hospital. The French Association for the Advancement of Science held a session in Lille, August 20th to 27th. Miss Philomene Ratinckx, of Antwerp, has passed a brilliant examination in the anatomical sciences before the combined jury of Ghent and Louvain for the faculty of medicine. She has also obtained the Royal diploma for the treatment of clubfoot. Dr. Westphal has been appointed ordinary Professor of Psychological Medicine in the University of Berlin.

New Medical Journals.—The *Paris Medical Record* is the title of a bimonthly journal, issued in Paris, in English, which proposes to supply the profession with literal translations from the medical periodicals and writings of all countries, together with a summary of all important medical news. The editor, Alexander Boggs, M. D., does not intend to compete with other journals, but rather to supplement them and extend their usefulness. As a complement to the *Record*, the editor will also issue a medical journal in French, the *Écho de la Presse Médicale.* We have received the first number of each publication, issued July 1st. Two numbers are to appear each month.

The *Sanitary Journal*, published in Toronto, Canada, is called bimonthly also, but it is to appear only once in two months. This journal is devoted to subjects bearing on public health, and is edited by Edward Playter, M. D. Its publication began July 1st.

Still another new journal comes to us from the West. It is a weekly, and is entitled the *Louisville Medical Reporter*, though edited and published in Henderson, Ky. No. 1 bears date August 6th. J. L. Cook, M. D., is editor, and James M. Hollway, M. D., associate editor.

Locomotive-Whistles.—The use of the steam-whistle is now forbidden on all lines of railway leading out from Boston, except as a danger-signal and on extraordinary occasions. This abatement of a veritable nuisance has been brought about by the labors of the Massachusetts Railroad Commissioners. We trust it is the beginning of a general movement in the same direction. The excessive use of the locomotive-whistle is not only a source of great annoyance both to sick and well, but its very familiarity defeats its purpose as a warning. It has been shown in England and in Massachusetts that it is not necessary to make frequent use of the whistle, and that roads can be managed just as well where it is employed more sparingly. We should be glad to hear that some steps had been taken in the matter by those interested in certain large hospitals situated on or near the main line of railways entering this city.

The British Medical Association.—The forty-second annual meeting of this Association, held last August, in Norwich, was largely attended, and was in every respect highly satisfactory to the members. The treasury of the society is overflowing, and the surplus is to be devoted to the advancement of science. The papers are given at length in the London journals. Sir Robert Christison is President-elect, and Edinburgh the place of meeting for next year. Dr. J. Russell delivered the address on medicine, and Sir James Paget that on surgery. Both were remarkably able papers.

Recent American Medical Literature.—It is gratifying to know that the recent work of American medical authors is received with much favor abroad. We allude especially to Prof. Barker's volume on the "Puerperal Diseases of Women," the work of Profs. Van Buren and Keyes on the "Genito-Urinary Diseases," and the exhaustive treatise on the "Physiology of Man," just completed by Prof. Austin Flint, Jr. On such works as these, and that of Prof. T. Gaillard Thomas, on Diseases of Women, the new edition of which has just appeared, the fame of the profession in the United States may safely rest.

The New Sydenham Society.—This Society appears, by the reports made at the last annual meeting, to be in a highly-flourishing condition. The balance-sheet shows an annual income of £3,566, and the Society has a surplus of over £1,000, in addition to a large and valuable stock of books. The works now in progress are "An Atlas of Skin-Diseases;" the biennial "Retrospect of Medicine and Surgery;" and a new edition of "Mayne's Lexicon." Cæsar H. Hawkins, F. R. S., was elected President for the coming year.

The New Bellevue Appointments.—At a meeting of the Medical Board of Bellevue Hospital, held on the 15th ult., the following nominations were made and sent to the Commissioners for ratification: Drs. E. G. Janeway, Frank H. Hamilton, W. H. Thompson, Erskine Mason, Francis Delafield, Thomas M. Markoe, J. W. S. Gouley, and Gouverneur M. Smith. The service of the staff is to be for a period of six months, or continuous, at the option of the Board.

The Hydrophobia Controversy.—The letters from Drs. Chas. P. Russel and A. Jacobi which appear in our present number, present the other side of a discussion to which we have already devoted considerable space. Both sides have now been heard, and as far as this JOURNAL is concerned we must consider the controversy closed.

The Diagnosis of Heart-Disease.—An original and highly-suggestive lecture on this subject, by George W. Balfour, M. D., will be found in the *Edinburgh Medical Journal* of June, 1874. It will amply repay careful study.

The Canada Medical Association.—The seventh annual meeting of this organization took place at Niagara Falls, August 5th, the President, Dr. Marsden, in the chair, the session lasting two days. Some interesting papers were read and discussed. Dr. Le Baron Botsford, of St. Johns, New Brunswick, was elected President for the ensuing year, and Halifax was chosen as the place of next meeting.

State Board of Health of Maryland.—We learn from the *Virginia Medical Monthly* that this Board has been organized and is now engaged in the performance of its duties. The following-named gentlemen compose the Board: Drs. Nathan R. Smith, Robert Ward, C. W. Chancellor, Charles M. Ellis, and E. Lloyd Howard.

The Medical Society of Virginia.—The fifth annual session of this Society, of which Dr. Alfred G. Tebault is President, will be held in Abingdon on the 13th inst. A large attendance is expected, and several papers of unusual interest will be read. The organization is increasing in size and influence every year.

Restoring Damaged Thermometers.—Dr. H. J. Barnes, in the Boston *Medical and Surgical Journal*, thus describes a simple method of restoring instruments that have become useless on account of displacement of the registering portion of mercury:

My registering thermometer, after being used two or three times, becomes worthless, as I was informed by one of our instrument-makers, in consequence of the needle being shaken down and uniting with the mercury at the bottom of the glass. He said he had a number of his own spoiled in this way by a gentleman examining them in his store, and that he could not repair them. He "would sell me another," and gave the valuable advice to "be more careful with it."

I declined to invest again in an article so easily made worthless, and set about repairing the old one, and succeeded after a number of experiments. Applying gentle heat to the bottom, the mercury quickly rises to an expansion at the top of the glass. Permitting a very little to enter this expansion, a sharp, quick blow on the top breaks the column in a number of places. Shaking all down in the lower bulb, a little remains at the top to form the needle. This is forced out by a considerable heat; then partially shake down, and the instrument is again serviceable. If too much mercury rises into the upper expansion, the needle is made too long, or perhaps the top of the glass is broken off.

Preventive against Poisoning by Quicksilver.—Since the year 1868, the floors of all the workshops at the looking-glass factory in Chauny have been sprinkled each day with a solution of ammonia. This simple precaution has given to the workmen absolute immunity from all mercury-poisoning, while some of the older employés, who had previously suffered from this affection, have since been relieved of all their symptoms.

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from August 14 *to September* 13, 1874.

Abadie, E. H., Surgeon.—Relieved from duty in Military Division of the Atlantic, to proceed to St. Louis, Mo., and there wait orders. S. O. 200, A. G. O., September 11, 1874.

Summers, John E., Surgeon.—To report to the commanding general, Department of the Platte, for duty as Medical Director of that Department. S. O. 200, C. S., A. G. O.

Smith, A. K., Surgeon.—Granted leave of absence for thirty days, on surgeon's certificate of disability. S. O. 135, Department of the Missouri, August 26, 1874.

Smith, J. R., Surgeon.—Assigned to duty as Post-Surgeon at Fort Monroe, Va. S. O. 200, C. S., A. G. O.

Wright, J. P., Surgeon.—Relieved from duty at Fort Hays, Kans., and assigned to duty as Chief Medical Officer, District of New Mexico, Santa Fé, N. M. S. O. 132, Department of the Missouri, August 22, 1874.

Storrow, S. A., Assistant Surgeon.—To report in person to the commanding general, Department of California, for assignment. S. O. 200, C. S., A. G. O.

Hartsuff, A., Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Laramie, Wyoming Ty. S. O. 126, Department of the Platte, August 29, 1874.

Notson, W. H., Assistant Surgeon.—Ordered to New York City for examination, for promotion, before the Army Medical Board, and at its conclusion to report to the commanding general, Department of the Platte, for assignment. S. O. 200, C. S., A. G. O.

Williams, J. W., Assistant Surgeon.—Assigned to duty at Fort Rice, Dakota Ty., as Post-Surgeon. S. O. 193, Department of Dakota, September 5, 1874.

Kinsman, J. H., Assistant Surgeon.—Granted leave of absence for one month, with permission to apply for an extension of five months. S. O. 189, Department of Dakota, August 31, 1874.

Bartholf, John H., Assistant Surgeon.—Ordered to New York City for examination, for promotion, before the Army Medical Board, and at its conclusion to report to the commanding general, Department of the Columbia, for assignment. S. O. 200, C. S., A. G. O.

Heizmann, C. L., Assistant Surgeon.—Assigned to duty with expedition under Captain Anson Mills, Third Cavalry, and, upon return of that command, to rejoin his proper station, Fort McPherson, Nebraska. S. O. 111, Department of the Platte, August 10, 1874.

Carvallo, C., Assistant Surgeon.—Ordered to New York City for examination, for promotion, before the Army Medical Board, and at its conclusion to report to the commanding general, Department of the Missouri, for assignment. S. O. 200, C. S., A. G. O.

Monroe, F. LeB., Assistant Surgeon.—Granted leave of absence for one month, provided he furnishes a suitable substitute during his absence. S. O. 139, Department of the South, August 29, 1874.

Lauderdale, J. V., Assistant Surgeon.—Assigned to temporary duty at Fort Leavenworth, Kans., Department of the Missouri, August 10, 1874.

Loring, L. Y., Assistant Surgeon.—To accompany battalion of Eighth Infantry to Fort Yuma, Cal., on steamer which leaves September 5th. S. O. 100, Military Division of the Pacific, August 31, 1874.

Elbrey, F. W., Assistant Surgeon. Ordered to New York City for examination, for promotion, before the Army Medical Board, and at its conclusion to report by letter to the Surgeon-General. S. O. 200, C. S., A. G. O.

Steinmetz, Wm. R., Assistant Surgeon.—Assigned to temporary duty at Fort McHenry, Md. S. O. 183, A. G. O., August 21, 1874.

Hall, J. D., Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Benton, M. T. S. O. 193, C. S., Department of Dakota.

Obituary.

Prof. Jeffries Wyman, of Harvard College, died of consumption September 4th, in Bethlehem, N. H., aged sixty years. Prof. Wyman, who was a native of Chelmsford, Mass., graduated in medicine in 1837, and subsequently visited Europe for the purpose of study. In 1843 he accepted the chair of Anatomy and Physiology in the Medical Department of Hampden-Sidney College, Richmond, Va., where he continued until 1847, when he resigned on his appointment as Hersey Professor of Anatomy in Harvard College, and Professor of Comparative Anatomy in the Lawrence Scientific School. He delivered two courses of lectures before the Lowell Institute in Boston, one of which was published under the title of "Twelve Lectures on Comparative Physiology." His other published writings consist of various articles on comparative anatomy, physiology, and embryology in the *American Journal of Science;* the "Smithsonian Contributions to Knowledge;" the *Boston Journal of Natural History*, and the "Proceedings of the Boston Society of Natural History," of which Association he was President for many years.

Surgeon-General George S. Beatson, principal medical officer of the British forces in India, died at Simla, June 7th, aged sixty years. Dr. Beatson had twice filled the highest post in the medical service in India, with credit to himself and advantage to the state.

Dr. R. E. Grant, F. R. S., Professor of Comparative Anatomy and Zoology in University College, London (which chair he had occupied since 1828), died August 23d. He is well known among scientific men, but had not done much original work for many years past.

Dr. Charles Woodward, for forty-eight years a practitioner of medicine in Cincinnati, and long eminent in his profession, died August 16th. Dr. Woodward was a graduate of the University of Pennsylvania.

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Original Communications.

Art. I.—*The Argument for the Antipyretic Treatment of Fever.*[1] By Leroy M. Yale, M. D.

I feel as if an apology were due to you for coming before you with such a well-worn theme as the treatment of fevers, especially as much that I have to present is of the most elementary character, and I am not sure that I shall offer any new fact of any importance. But I ask your indulgence because, first, it is always well to systematically review our knowledge of any subject; and, secondly, because at present no subject of medical inquiry is exciting more earnest attention than this of fever in its general sense. The use of the thermometer has brought about a reconsideration of the whole matter, by both physiologists and practitioners. The most striking outcome of their united endeavors is the so-called antipyretic treatment. This plan has already been employed for several years, but not so generally as it should be if the half that is said in its favor be true. Those who have had the largest experience in its use are, almost without dissenting voice, its warmest advocates.

During the past two years I have several times encountered cases of high fever against which all ordinary treatment proved utterly unavailing. In these extremities I have used, in one form or another, the plan of treatment which we are about to consider. As these cases have been in private practice only, they are still far too few in number to possess any statistical value; yet the hourly watching them has so far convinced me of the efficacy of the method, that I have gladly accepted the invitation of the President—who, in one of these cases, gave me the benefit of his daily counsel—to present its claims to-night. I must, however, first of all disclaim for this paper any especial originality. The field has been worked by such skillful laborers that I shall present a more connected statement by making free use of their results, and uniting with them such confirmatory evidence as I have been able to obtain. Chief of all, I am indebted to the papers of Prof. Liebermeister, who is a master in this branch of investigation.

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[1] Read before the New York Academy of Medicine, October 2, 1873.

Of fever, the most striking phenomenon, the most important because probably underlying the others, is the pyrexia, the simple elevation of temperature namely, and it is against this that the antipyretic method is directed.

The antipyretic treatment includes antipyretic measures proper, or those which abstract heat from the body, and antithermic or anticaustic measures, or such as limit the generation of heat, and these will best be considered separately, although ordinarily employed simultaneously.

The chief antipyretic measure in use is the application to the person of water of a temperature below that of the body. This, as every one knows, is no new thing: James Currie, at the close of the last century, vigorously employed it with the happiest results, and his followers vaunted its efficacy in nearly all the specific fevers. In spite of a temporary vogue, after perhaps twenty years, it fell into such total disuse that we today might wonder whether Currie and his school were romancers, or we blind followers of fashion who have abandoned one of the most reliable resources of our art. But, if, as is doubtless the truth, the neglect of water-treatment is the fault neither of exaggeration nor stupidity, but of the purely empirical basis on which it rested, without science to guide its application or to secure its perpetuity, it will, I am sure, be time well spent to make a digression for a mention of the theoretical grounds of its use, the laws, namely, of the production and regulation of heat within the human body. Regarding many points physiologists are still at variance, and I shall endeavor to avoid such as are in dispute.

Long before the subject of animal heat had been investigated with the accurate methods of modern physiology, the fact was known that the human body not only had a temperature above that of its surroundings under ordinary circumstances, but that in health the temperature taken in the cavities of the body was essentially invariable, being unaffected, or nearly so, by any change of temperature in the surrounding atmosphere, or variation in the relations of the person. This fixed temperature is 37° C., or 98.6° Fahr.

The loss of heat from the human body, moreover, is one of the most familiar of facts. This loss is accomplished by radiation, by perspiration, and evaporation, by the expiration of heated air, and in similar ways. The loss is not fixed in amount, but is diminished or increased by the rise or fall of the temperature of the surrounding atmosphere, and is likewise increased by a profuse perspiration, or by an exaggeration of any of the ordinary methods of loss. Nevertheless, under ordinary circumstances, the loss is tolerably uniform, and its amount has been ascertained to be sufficient, if retained within the body, to raise the temperature of the body 1° C. (1.8° Fahr.) every half-hour, or to warm a body of water five-sixths of the weight of the person the same amount in the same time. That is, if the heat each one of us gives off in twenty-four hours could consistently with life be retained within his body, its temperature at the end of that time would have risen 48° C., or 86.4° Fahr., and would have reached 185° Fahr., a temperature above the point of coagulation of albumen, and high enough to cook the tissues. This loss is made good by the production of heat within the tissues; and, as the loss is subject to great increase at times, the production must be in some way accurately adjusted to the loss, in order that the body should preserve its uniform temperature of 98.6° Fahr. The production is due to chemical changes, to oxidation, namely, within the tissues, and it may be increased by those agencies which augment oxidation; for instance, by the ingestion of food, particularly such as is readily oxidizable, or by muscular exertion, which alone may many times increase the ordinary production. Now, it is evident that the relation of loss and production must in some way be regulated, otherwise a day's work, even of the short duration now legal, would leave the laborer with a terrible fever temperature, or a few hours' exposure to cold would chill him below the limits of safety.

There are two general ways in which this correspondence is preserved; by the limitation of the loss, and by the accommodation of the production to the loss. The loss is limited automatically by the effect of cold upon the skin. When the skin is chilled there is an immediate contraction of the capillaries, the amount of blood circulating superficially is much diminished, and, as the body as a mass must cool very slowly, and the warm blood is in great part kept from the surface, the abstraction of heat is greatly diminished, and the heat-producing function is relieved as far as possible from excessive strain. Conversely, when the surrounding atmosphere is warm, the capillaries are dilated, the superficial circulation abundant, radiation rapid, the sweat-glands are stimulated to action, and the evaporation of moisture from the surface effectually aids the loss of heat. Instinct and intelligence lead animals and man to limit or increase at will the loss of heat by choice of place of abode, by their coverings, and in the case of man by many artificial contrivances.

Still further the amount of heat produced is directly dependent upon the amount lost. Under ordinary circumstances this is not very apparent, except as inferred by the greater inclination to muscular exertion, and by the greater desire for food in cold weather to supply the waste, and in very cold weather the unusual appetite for easily-oxidizable articles, such as fatty substances. But by means of physiological experiments, the increased production can be demonstrated and its amount measured. The most convenient method is by immersion of the body in a bath of a temperature below that of the body. Let us take a simple example, dismissing the corrections to be made. We have seen that the heat normally lost by a man weighing one hundred and fifty pounds would in half an hour raise one hundred and twenty-five pounds of water 1° C., or two hundred and fifty pounds .5° C. or .9° Fahr. If, however, at the end of the time we find the two hundred and fifty pounds raised 3° C., we must conclude that the body has lost six times its normal amount; and if, in the mean time, the body preserves its normal temperature, it is evident that there has been an equivalent production. Now, in fact, it has been found that, after proper corrections have been made for heat acquired from the air, loss by evaporation, superficial cooling of the body, etc., the loss is:

In a bath of	20° C.=	68° Fahr.,	6½ times the normal.	
" "	22.5° C.=	72° "	4½ "	"
" "	25° C.=	77° "	3+ "	"
" "	28° to 30° C.=	82.4° to 80° "	2+ "	"
" "	34° to 35° C.=	93.2° to 95° "	about the normal.	

From which it appears that the production of heat increases with the abstraction.

The question remains, by what means is this correspondence between loss and production effected? As far as we now know, it must be through the nervous system, as all other proposed explanations are totally inadequate. But, on the part of the nervous system, both a heat-inhibitory centre and an excito-caloric centre (the latter acting in a reflex manner under stimulation from the skin) have been assumed. Facts and experiments have been forthcoming to support both theories, but those on which the hypothesis of an inhibitory centre rested have been recently discredited.[1] If it be a fact, as alleged, that cold water injected into the rectum abstracts heat without exciting production, it would certainly lend weight to the assumption of an excito-caloric centre dependent upon reflex excitation from the skin.

Like all other functions, that of heat-production has its limits of activity. For a short time the production may be enormously stimulated, but, when the limit is reached, there is either a depression of body temperature, as when the loss is too severe or prolonged, or, if, by too great artificial heat or excessive muscular exertion, the accumulation is very great, a condition of fever is assumed, or exhaustion follows.

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[1] *See* Dr. Burdon Sanderson's address to the British Medical Association, 1873.

Thus far the conditions obtaining in health. Whenever the state denominated fever exists, the most striking, and we believe the most essential, change from the condition of health is the rise in temperature. This is not due simply to increased production (generally twenty to twenty-five per cent.), for this is often exceeded in health as the result of excessive muscular exertion. Nor is it due to storage of heat, for there is the equilibrium of production and loss, just as in health, with this essential difference, that, instead of 98.6° Fahr., some other and higher point is the standard of regulation. With this change, the production and regulation of heat are under the same laws as before; but the body is now less tolerant of prolonged or severe abstraction of heat than it is in health, probably because the raising of the regulation-point has by so much exhausted the producing power held in reserve. It is upon this peculiarity in great measure that the success of the antipyretic method depends; the abstraction of heat still excites greater production, but the limit is more speedily reached, and a positive fall results at once or soon after, as if by reaction.

This change of the regulation-point explains readily the phenomena of fever. If the change is gradually made, there is a gradual increase of production, and generally a dry skin limits the loss until equilibrium is reached. If, however, the change occurs suddenly, the body is placed in the same relative condition as it would have been if there had been such a large and sudden abstraction of heat (as, for instance, by immersion in iced water) as to bring the heat of the body below the regulation-point. Every effort is made by the economy to bring the temperature of the body up to the new point. The conservative phenomena of a chill are at once presented; we have already seen how the capillary contraction and resulting superficial anæmia limit the loss of heat, and how the shivering is an involuntary muscular effort for still greater production. In addition, greater oxidation is going on, and during the chill the elimination of carbonic acid may be doubled or trebled. The severity of the chill is proportioned rather to the rapidity than to the degree of the change in the regulation-point. The chill or chilliness will continue until the temperature of the body reaches its new regulation, and it is now apparent why, if this point be, say, 105° Fahr., the patient still suffers from cold, when his temperature is 103° Fahr., and why, before full equilibrium is established, he is often abnormally sensitive to slight draughts of air and the like. When at length the regulation is effected, the equilibrium will be maintained with its daily fluctuations until the regulation-point is again changed; if to a higher one, then the symptoms of the first rise will be repeated in a greater or less degree; if to a lower point, if the change be slow, the fall of the fever will be gradual; if rapid, the body is suddenly placed in a condition of superheating. The excessive production ceases, every avenue for the escape of heat is opened, clothing is not tolerated, profuse perspiration breaks out, and persists till the stored-up heat that preserved the abnormally high temperature has been given off, and the body reaches the temperature of the new regulation-point (or even temporarily a little below, if we take skin temperature). Most of you have seen the axillary temperature in the first forty-eight hours of defervescence of pneumonia sink to 96° Fahr. or thereabouts.

Examples of these various methods of change will present themselves directly to you all. For instance, the severe chill, short equilibrium, and sudden defervescence, are seen in our typical intermittents; the sharp onset, prolonged equilibrium, and speedy fall in pneumonia, of ordinary course; the slow access, long equilibrium, and gradual fall, in typhoid fever. Many peculiar modifications of these points are seen in other diseases, notably in remittent fevers, catarrhal inflammations, and the like.

It every day becomes more and more certain that the great majority of persons, dying of diseases attended with acute pyrexia, die because of the high temperature and changes wrought by it upon the tissues, rather than from the exhaustion caused by the destruction of tissue by oxidation and over-production of heat. If the temperature of an animal is artificially raised 9° or 10° Fahr., the animal will die. Clinical experience shows us that the human body can endure but for a very short time a like elevation of temperature. The tolerance is greater for a lower degree of pyrexia, and where the elevation is very slight it may be endured until the consumption rather than the change of tissue may be the cause of death. But, as has just been said, in high fever the danger is mainly from this effect of the elevated temperature upon the integrity of the tissues, and most of all upon the circulatory and nervous systems, as manifested in cardiac or cerebral palsy. There is no need to call to your attention the evidence of failure of the heart's power in the changes of the pulse, the local congestions; nor of the progressive disturbances in the functions of the encephalon, the delirium, the interferences with coördination, and finally the damage to the medulla, that rapidly proves fatal. Long before any material wasting occurs, there are in both heart and brain actual tissue-changes taking place which may destroy life, or which may persist long after convalescence has been established.

If, then, such damage is the direct result of keeping the tissues at a temperature incompatible with their integrity, the prime indication of treatment is to lower this temperature to within safe limits by the use of the antipyretic and antithermic means at our command. Even if the depression is but temporary, it will be of great value by interrupting the morbid process; fever being, as a rule, dangerous in proportion to its continuity, clinical proof of which may be drawn from the far less fatality of periodical fever, however prolonged, where the high temperature is interrupted, as compared with that of fever of a more continued type.

The great antipyretic measure is, as already said, the application to the person of water of a temperature more or less below that of the body. The particular method in which this is done may vary greatly. The general bath, the cold douche, the pack, washings or spongings, are all employed, besides local abstractions of heat, as by ice-bags, cool drinks, and rectal injections.

In the foreign hospitals, from which our statistics are mainly gathered, the *general bath* has been the method chosen, and where it can be employed is doubtless the most effectual. The temperature for patients of ordinary vigor is about 70° Fahr. Baths much colder may in emergencies be used, but

70° is cold enough for cases where the fever is likely to continue. The time that the patient is immersed will average ten minutes; five to seven minutes will be sufficient for many persons. While the patient is in the bath his bed should be arranged with warm, dry wrappings, and with a foot-warmer of some sort. The patient is removed without delay, for drying, to these wrappings, and rolled warmly up, and left quite undisturbed. Most patients will be the better for a glass of wine or spirits-and-water, to prevent cardiac depression. Although the cold bath of this short duration is more effectual than a longer warmer one, there are patients whom we may hesitate to treat with so great rigor, and for whom a bath of 75° Fahr., or even higher, will be more prudent. Ziemssen has suggested the use of warm or hot baths, say of about 95° Fahr., gradually cooled to 75° Fahr. or lower. In diseases having a course at all prolonged, and where it is desirable to make a decided and at the same time quite continued depression of temperature, the bath is the best form of water-treatment. In private practice, however, it can rarely be effectually employed unless the sick-room and bath-room are adjoining, and for my own part my experience of the full bath is confined to the eruptive fevers in children, who can be easily carried from room to room.

The next most efficient method is, I believe, the *pack*. It has the advantages of being well borne by even very feeble patients, and of being applicable under nearly all circumstances. It has not the power of the bath. I have, however, I think, obtained considerable power by giving it in the following manner: Upon the floor or upon a cot-bed placed near the sick-bed, a large rubber sheet is placed, and upon it several thicknesses of sheets dipped in water of the proper temperature. The sheets should be folded in such a way as to be large enough to envelop the trunk and thighs of the patient. As the duration of the pack may be long continued, it is well that the extremities, particularly the lower, should not be included, in order that chilling may be avoided. Upon these wrappings the patient is placed, and the sheets folded over the person. The edge of the rubber sheet should then be turned up to retain the water, and with a large carriage-sponge the cloths kept constantly drenched with fresh water from a pail, and the overflow as rapidly removed to another vessel. One who has not witnessed this application of water will scarcely believe how rapidly it is heated. But by the constant renewal of the water, a powerful irrigation is established that approximates the bath in efficiency, and is free from the peculiar disadvantage of the douche. The temperature of the water to be used depends upon the same considerations as when the bath is employed.

The *douche* is far more valuable for excitation of respiration than for abstraction of heat. It does certainly depress the temperature, but its great use is in cases where, as in sudden hyperpyrexia, cyanosis and evidence of passive pulmonary congestion are present.

Sponging with cold or even iced water has a very considerable power in lowering the temperature if persisted in for some time. It is, I believe, most applicable in cases of acute pyrexia of naturally short duration, in which the defervescence, if once accomplished, is generally more or less lasting, or to cases, like those of surgical fever, which I shall quote, where the nature of the injury or operation, or the surgical dressing, forbids the bath or pack. The efficacy of *hot sponging* depends chiefly or solely upon evaporation from the surface.

Local applications have only a local effect, and are useful to combat local symptoms, such as cerebral congestion. A peculiarity attributed to rectal injections—that, namely, they simply abstract heat without stimulating production—has been mentioned. But it is evident that such an application could not be long continued, without doing damage greater than its benefit. It may be used as an adjuvant to other methods. The ingestion of cool drinks has advantages and disadvantages similar to those of rectal injections.

The abstraction of heat by water is sometimes insufficient to make an intermission or remission of the fever; under such circumstances the object may generally be obtained by the additional use of certain drugs, notably quinine, digitalis, veratrum, and aconite.

In using quinine to depress the temperature, it must be given in very large doses. I am not referring at all to its so-called specific action in combating malarial fever, nor to its use in fever of probable septic origin, where its antiseptic power may be called into play, but to its use in causing a remission in a fever otherwise continuous or nearly so. For this purpose the dose must be very great, that recommended by German writers varying, according to circumstances, from fifteen to forty grains. They claim that such doses are always followed by some remission of fever, generally by a marked one, i. e., to below 100° Fahr., but that to accomplish this the full dose of quinine must be taken at once, or if divided the portions must be separated by very short intervals, just sufficient to prevent rejection by the stomach, say of fifteen minutes. If the depression be thus obtained, the medicine need not be repeated sooner than forty-eight hours, and the dose may then be somewhat smaller in size.

I have carefully watched many cases and have never been able to see any considerable depression that I could certainly attribute to the medicine if the quinine were given in divided and separate doses, even if twenty-five or thirty grains were taken in a day, excepting always cases in which a malarial element was present, which I freely admit is very likely to be the case in this region. I think the nervous disturbance produced by the drug in some patients, particularly women, more than compensates for the value of the quinine, if we exceed ordinary tonic doses, unless we give enough to decidedly depress the heat and thus relieve in one way more than we distress in another. If the stomach does not tolerate the dose, the rectum or the subcutaneous tissue will, if the urgency of the case demand it at all.

With digitalis and veratrum I have so little experience in this connection that I am obliged to give a quotation from Liebermeister:

"In severe febrile diseases in general, the more excessive is the frequency of the pulse, the less is digitalis indicated; it seems, when heart-palsy is impending, to hasten its appearance under certain circumstances.

"It may, on the contrary, be given in typhoid fever with benefit, so long as the heart's action is not excessively frequent, or at least while it has still considerable power. In especially severe and obstinate cases, where a sufficient depression of temperature cannot be obtained by quinine alone, the desired effect may generally be obtained by a combination of digitalis and quinine. From three-quarters of a gramme to a gramme and a half (say eleven to twenty-two grains) of digitalis in substance is gradually given in the course of twenty-four or thirty-six hours, and immediately afterward a full dose of quinine (2 to 2½ grammes = 30 to 38 grains). If this brings about a perfect intermission, quinine alone generally ceases its repetition.

"Veratrine is a very reliable antipyretic, if it be given in sufficiently large doses; it often brings about a perfect intermission in cases in which it cannot be obtained by means of quinine. I usually give pills containing five milligrammes (about one-thirteenth of a grain) of veratrine each, one hourly until severe nausea or vomiting occurs. Four to six pills generally suffice. The collapse which easily follows the vomiting, where the temperature rapidly falls, is not dangerous in typhus cases, and is ordinarily speedily removed by wine or other analeptics."

Whether in the midst of a typhoid fever this interference with the stomach is judicious, would seem to me to be open to question.

From the use of aconite I think I have also seen decided lowering of the temperature, but as it has generally been employed in conjunction with other remedies, and in fevers of short duration, I am in doubt just how much is due to each, and how much to the natural fever-curve.

I have thus presented the method known as the antipyretic. It remains to be said, regarding the bath, that it is to be given as often as required to keep down the temperature below a given point, for unless we overcome the production of heat we are simply stimulating consumption; many baths daily may be necessary. Liebermeister mentions a case in which, during the illness, about two hundred baths were administered. I have myself given in a week to a single patient thirty-five of the irrigated packs already described, varying in duration from ten to thirty minutes each. In another case I have kept the cloths wet with tepid water for twelve hours consecutively. Nor should any *a priori* dread deter the physician from the plan; he should be guided by the actual results, and must adapt the degree and details of treatment to each case and its varying condition. And here lies the greatest difficulty of the whole matter—cold and full doses of our most active drugs are agencies powerful for good or evil; and, that they should be uniformly potent for good, demands constant intelligent attention from a medical man. In the city it can be carried on often by advanced students who are generally quite willing to perform the arduous duty for the experience thus gained. That it is taxing is true enough, but is the labor greater than is often necessary to save a case of peritonitis or to successfully carry through many surgical operations?

But the great question still is, Is the benefit of the treatment at all commensurate with its labor? And to answer this question I shall briefly give some statistics that I have made note of during the last three years:

1. *Typhus and Typhoid Fevers.*—The earliest I have met are those of the Kiel Hospital, where, under ordinary treatment, during the eleven years 1850 to 1861, there were 330 cases, 51 deaths = 15.4 per cent. In the same hospital from 1863 to 1866, there were treated with cold water, 160 cases, 5 deaths = 3.1 per cent.

Liebermeister's statistics of the hospital at Basle:

I. *Ordinary Expectant Treatment*, with (toward the end of the time) an occasional bath:

Date.	Cases.	Deaths.	Per cent.
1843 to 1853	444	135	30.4
1854 to 1859	643	172	26.7
1860 to 1864	631	162	25.7
	1,718	469	27.3

II. *Imperfect Antipyretic Treatment*, i. e., the use of perhaps one bath daily, rarely two, and a moderate use of quinine and digitalis: January, 1865, to September, 1866, 982 cases, 159 deaths = 16.2 per cent.

III. *Active Antipyretic Treatment:*

Date.	Cases.	Deaths.	Per cent.
Sept., 1866 to end of 1867	339	33	9.7
1868	181	11	6.1
1869	186	10	5.4
1870	139	10	7.2
	845	64	7.6

Liebermeister makes allowance for the difference in diagnosis in the two periods, and still thinks the mortality not above a third of that formerly existing.

Binz (*Lancet*, February 4, 1871) gives the result of his trial at the Army Hospital, near Compiègne, in the campaign of 1870–'71, where he had, up to the time of report, treated one hundred and ninety cases of typhoid fever, one hundred and thirty of mild type, and sixty of grave. The mild cases he throws out of consideration altogether. The statistics are of the sixty grave cases only. The treatment was the bath of about 77° Fahr., and wine on leaving it, and every second day fifteen to twenty-two grains (1 gramme to 1½) of quinine. Of these sixty cases, one died from peritonitis, two from intestinal hæmorrhage, and a fourth he counts as fatal from diarrhœa, although still living at the time of report. This gives a mortality of 6.6 per cent.

The Dresden hospital for fever patients had, in 1870, a death-rate of 4 per cent. (*Lancet*, December 31, 1870) for two hundred cases treated in this way.

I had hoped to give you some statistics from our own fever hospital, where this plan was tried several years ago with asserted success. But no record can now be found.

In the *eruptive fevers* the benefits of the water-treatment are said to be not less than in the typh-fevers. I have noted many favorable comments upon its use, but have met with no statistics. From my own observations I am able, however, to testify to the relief of suffering from the use of the tepid bath.

Two of my medical friends have related to me cases of *puerperal fever* in which the pack in the one case and sponging in the other greatly mitigated the suffering, and in their belief prolonged life, although a fatal result was not prevented.

The result in *pneumonia*, of a type grave enough to demand any such treatment, is certainly relief, and Liebermeister asserts that, in two hundred severe cases in which he has used this treatment, he has materially diminished the mortality.

In cases of *hyperpyrexia*, sometimes occurring in *acute articular rheumatism*, and which ordinarily are dangerous in the extreme, it has been much praised, particularly by the

German writers, although not by them alone. Cases of the use of the bath 86° to 90° Fahr., and of the cold pack in this condition, may be found in the *Practitioner*, numbers for July, 1872, and February, 1873.

During the summers of 1872 and 1873, the antipyretic plan was employed at Bellevue Hospital to subdue the intense fever in cases of *sunstroke.* The most common method resorted to was the sponging, although the pack, douche, and enema, were likewise used. Digitalis and aconite were added in the more rebellious cases. One case reported by Dr. Katzenbach (NEW YORK MEDICAL JOURNAL) showed the extraordinary temperature of 110½° Fahr. The application of the wet sheet, kept wet by sprinkling, reduced the temperature to 104¾° Fahr. in the course of two and a half hours. The pulse and respiration at first rose and then fell. The chest was cupped to relieve cyanosis, and after half an hour the pack renewed; half an hour later the temperature was 102° Fahr., a fall of 8½° Fahr. in three hours and a half. Cold sponging was then substituted, and later hypodermic injections of tinct. digitalis added, reducing the temperature still further. The patient recovered.

Dr. Perry, House-physician at Bellevue Hospital, has been investigating this subject, and has very generously placed his case-book at my disposal, and has given me the following abstract of the results in the hospital:

"Our method of employing antipyretic treatment in insolation has been to strip the patient, lay him on the floor, or upon a bed upon which a rubber cloth has been placed, and then to rub the body with ice or with a large sponge wet with ice-water, until the temperature falls several degrees, as shown by the axillary thermometer. Frequently the water is poured from a pitcher from a height of two or three feet or more, but in such cases the object is to arouse the patient or give him a shock, rather than to reduce the temperature. The fall in temperature under this treatment is very sudden.

"In one case of insolation admitted comatose, with puffing respiration, tracheal *râles*, and a temperature of 106¼° Fahr., the temperature fell in fifteen minutes to 101¾° Fahr., and the pulse from 160 to 120. This reduction was maintained for half an hour after the application of water was discontinued.

"Fanning continuously has been often used to hasten the evaporation of the water, and is considered a valuable adjunct in reducing temperature, but is not indispensable. When, however, the temperature has been reduced by water, constant fanning will materially assist in maintaining the reduced temperature. The treatment has been followed when the patient has been lying on the floor with the windows and doors of the ward open, and the strongest current of air allowed to pass over him without any subsequent ill-effects.

"Again, hot water has been employed to reduce the temperature still further, when, during the application of cold water, the temperature remains at nearly the same point for some minutes. There is no doubt that the temperature may be reduced to almost any point if the ice-water is vigorously applied. But, by the application of hot water, it is thought that the evaporation is much hastened, and consequently a greater reduction is obtained upon the temperature. In the case above quoted, the temperature was reduced from $101\frac{3}{4}$° Fahr., the point obtained by cold water, to 99° Fahr., and the pulse was noticed to increase in fullness, and to fall from 116 to 96."

From Dr. Perry's case-book examples might be multiplied to illustrate the different forms in which water was used, and the use of digitalis and aconite, but I have already extended this paper far beyond my intent. I am unable to state the precise change in the death-rate of cases of sunstroke since the use of the antipyretic system, as I have no statistics of what it formerly was, but I am verbally assured that it has decreased. I am certain that cases with excessively high temperature are now saved that were almost uniformly fatal within my own recollection of hospital cases. The time requisite to reduce the temperature varies considerably; but, if the temperature be 106° Fahr. or more, a fall of about five degrees may be expected within an hour and a half to two hours, at least it so appears for the cases recorded by Dr. Perry.

Dr. Burchard, one of the house-surgeons of Bellevue Hospital, informs me he has treated a large number of cases of surgical fever by water with very gratifying results. He has given an abstract of several illustrative cases, with the following comment:

"By experience I have learned that cold water, ice-water if you please, reduces the pulse and temperature more rapidly than either hot or tepid, but the shock is to be deprecated in feeble cases, and the reaction is more speedy and greater. Hot water answers next best, but sometimes will not reduce the temperature. I think the after-feeling of hot sponging more agreeable to patients than cold. Tepid water is perhaps pleasanter to the patient than either hot or cold, but its effects are not so decided or permanent. I often employ ice-water for a couple of hours, then tepid, or frequently a mixture of equal parts of alcohol and ice-water; this answers admirably in surgical fever."

Besides the depression of temperature, and the slowing of the pulse—which latter, in my experience, is not so uniform or quite so speedy a result—I am sure the water-treatment diminishes the irritability of the nervous system, which is certainly of great importance, especially in those cases where this irritability is the chief, if not the only appreciable, cause for the continuance of the high temperature.

It is, lastly, not a small consideration that by this management cleanliness is easily maintained, and the tendency to bedsores diminished.

In the foregoing remarks I have endeavored to make evident the following propositions:

I. That there is an exact regulation of the heat of the human body in health, the production corresponding to the loss, but that excessive abstraction of heat may overcome the power of production.

II. That the same laws govern the high temperature of ever, with the exception that the producing power is more peedily exhausted.

III. That the danger in acute pyrexia is due not so much o consumption of tissue and consequent exhaustion, as to tisue-changes incompatible with life, caused by the elevation of emperature, and that this danger is proportional to the height nd continuity of the fever.

IV. That the indication is to abstract heat and limit its roduction in all cases in which the temperature is so high as o make the danger from it greater than that from exhaustion.

V. That in the use of cold water we possess an agent adequate to overcome the heat-producing power.

VI. That we possess certain drugs that have the power of interrupting the excessive heat-production.

VII. That the statistics of the antipyretic method are exceedingly favorable, when compared with those of any other plan of treatment, for all forms of acute pyrexia, whether with reference to diminished death-rate or to mitigated suffering.

Art. II.—*Croup.*[1] By J. B. Hamilton, M. D., Kane, Ill.

Until the last quarter of the present century, the disease under consideration has been one of the broadest outlets of infantile life; and the narrowing of the outlet has been more on account of the conservatism of medicine, than because of any great discoveries in pathology or treatment. To say we do not treat croup too much is to say that we have improved.

Nomenclature.—After several attempts by various English writers to change the name into one more descriptive, we find at last that all have been discarded, and the old name, given it by the common people, from a fancied resemblance to the sound emitted by a fowl when held in the hand, is accepted without protest. The Greeks called it *cynanche*, or *dog-choke*, after another of its symptoms. And it has been found impracticable to give a scientific name to a disease that is sometimes manifested in the larynx alone, sometimes in the trachea, sometimes in the terminal bronchi; or which, commencing in the larynx, may extend simultaneously upward to the pharynx and nasal mucous membrane, and downward along the length of the trachea. Among the English-speaking peoples it will always retain the common name of *croup*.

Pathology.—Croup is essentially an inflammation of the lining membrane of the air-passages—nothing more, nothing less. It is usually confined to the larynx, but frequently extends to the trachea and bronchi.

Croup is sometimes accidentally, sometimes by judicious treatment, aborted at the outset, and it is then usually termed *false croup*, *spasmodic croup*, or *spasmodic laryngitis*.

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[1] Read before the Medical Society of Greene County, Ill., December, 1873.

The primary or hyperæmic stage is the commencement of croup, and it should be carefully distinguished from spasm of the glottis (*laryngismus stridulus*), as the latter more frequently occurs from nervous reflex action, or irritability of the motor branches of the laryngeal nerves; the second stage is that of congestion and exudation; and the third that of the consolidation or resolution of the exudate. In short, the history of croup is the history of the mechanism of inflammation, and all its forms are but modifications of that mechanism.

The division of croup into two distinct diseases has caused confusion, and this is owing largely to the fact that spasmodic or night croup is almost unknown in Europe as such; and the reported cases were so universally fatal that in America it was supposed to be an independent affection, only assuming the name croup by a sort of piracy.

The belief formerly prevailed that, in a case of true croup, the exudate thrown out (which, afterward consolidating, assumed the appearance of a membrane), was a true membrane, pathognomonic of and specifically formed by this disease. Among the first to oppose this doctrine was M. Billard,[1] of Angers. He held that the elements of the membrane existed in the ordinary secretions of the part. He thought the mucous membrane generally supplied the secretion, which, becoming more and more condensed and adherent to the secreting surface, in the first instance, than in healthful mucous membrane, became still more consolidated and adherent, with increasing age, on account of the loss of moisture; and that, once firmly consolidated, the effect of a copious and fluid secretion beneath must be to loosen the morbid lining and facilitate its expulsion.

Here, then, we have, nearly fifty years ago, a tolerably succinct account of the formation of the false membrane. “Pseudo-membranous” croup has been by many supposed to be identical with diphtheria, but this idea is certainly fallacious. Diphtheria is essentially contagious, croup is not. The exudate n diphtheria is putrid and destitute of fibrine; the exudate of roup shows no tendency toward decomposition, and is largely fibrinous. Diphtheria is as constantly followed by sequelæ as scarlatina; while croup, when recovered from, has no sequelæ proper to the disease. Diphtheria is a blood-poisoning, with local manifestations. Croup has no general symptoms of blood-poisoning, and is a local disease. An understanding of the mechanism of inflammation, when seated in a particular part of the air-passages, will enable every symptom of croup, whether true or false, to be satisfactorily explained, while the phenomena attending diphtheria cannot be so explained.

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[1] *Boston Medical and Surgical Journal*, vol. iii., February, 1830.

The exudate of croup has been the subject of much study, and the belief has now become general that the pseudo-membrane is simply the coagulation of exuded lymph. One cause of the rapid coagulation of the exudate is to be found in the heightened temperature of the passing air-current, which is already warmed by the nasal passages; the inflammatory process going on below further heats it, and renders the absorption of moisture from the exudate very great. It is this which renders the inhalation of partially condensed vapor so agreeable to a patient in this stage of the disease. Another cause is the large amount of the exudate thrown out, as it is well known that the greater the amount of the exudate the sooner coagulation takes place.

Prognosis.—The prognosis of the disease is not to be determined by the amount of membrane formed, but by the extent and intensity of the inflammation. In primary croup, in the hyperæmic stage, a favorable prognosis can nearly always be given, as with proper treatment it may be prevented from running its regular course. The writer is inclined to the belief that the comparative rarity of true croup is owing to its being aborted by treatment while in the primary stage. When we are summoned after the exudation has begun, we are not warranted in giving a favorable prognosis, knowing that the extension of the inflammatory process throughout the larynx, trachea, and bronchi—no very unlikely event—is, in the majority of cases, followed by death. And this, too, notwithstanding the astounding results constantly being published by those who had "previously lost nearly every case of croup, but, since adopting such and such treatment, had not lost a single case," etc. The variety of specifics for croup has been very large, but unfortunately they rarely remain specifics through a single season.

Symptoms.—The attack usually comes at night, and can often be traced to exposure; at any rate, the child "takes cold," the laryngeal lining membrane becomes hyperæmic, thickened, turgid with blood, and, as the swelling increases the diameter of the air-passage becomes lessened, the membrane constantly becoming drier; and, as respiration becomes more and more difficult, the passing air-currents make a noise as if passing through a metallic tube. The child now has a hoarse, brazen, ringing cough, so characteristic that it is denominated "croupy," and, once heard, is never forgotten. These are the symptoms of ordinary "spasmodic" croup, or first stage of croup.

When this seizure is sudden, the parents are generally alarmed, and at once summon medical aid, but it frequently happens that the hyperæmic stage is slow in forming, and the symptoms are gradually progressive; then the disease escapes notice under the guise of a "bad cold" or "sore-throat," until exudation has commenced, and the persistent height of fever warns the parents that something more than a "cold" is the matter with the patient. It must not be assumed that all cases of pseudo-membranous croup run their course so gradually, for in some exceptional cases the false membrane may form in a few hours; but usually it will be found to have had a gradual onset. In all varieties of croup the fever is constant, but speedily abates upon the subsidence of the hyperæmic condition, in spasmodic croup; while in those cases in which the inflammation runs its natural course the fever remains until the inflammation abates, or death of the patient ensues.

Diagnosis.—The points already stated will enable one to distinguish this disease from diphtheria; and another point of difference is found in the fact that the latter *commences in the pharynx* and the exudate may be found there, and extends *downward* as the disease advances; while croupal exudate *begins in the larynx*, and only *extends upward* as the disease advances.

Acute Laryngitis.—Except when of traumatic origin, it will be found impossible to distinguish this affection from croup confined to the larynx, but this is what we call it when croup occurs in an adult. It is fair to state, however, that acute laryngitis presents difficulty in swallowing, which is unaccounted for by the inflammation in the fauces. It is probable that the difference in the shape, size, and relations of the laryngeal apparatus may account for this difference. Laryngitis, as one of the sequelæ of measles, scarlatina, or variola, may assume the croupy characteristics, but doubt in this case is at once put at rest by the history of the case.

From *œdema of the glottis* it is diagnosticated by the absence of fever in the latter, unless the œdema occur while suffering from febrile disease, by the absence of the brazen ringing in the sound of the cough, and a history of previously-ulcerated larynx.

Treatment.—And now we approach a division of the subject about which there will always be a great difference of opinion until the pathology of the affection is better understood. Dr. F. A. Willard,[1] as late as 1835, reports a case which represents so fully the good old practice, that I cannot forbear transcribing it, only abbreviating when too voluminous for our purpose:

"*March* 15, 1835.—Called to visit T. C., a boy three years old; found him with pulse 130, hard, full, quick, and bounding, breathing laborious, suffocative, short cough, red tongue, skin hot and dry except head and face, lips and cheeks alternately pale and red, neck engorged, head thrown back, eyes protruding, countenance exhibiting great distress. Applied six leeches to the lower part of the trachea; five grains of submuriate of mercury once in three hours, two drops of hydrocyanic acid once in four hours; mild mercurial ointment to be rubbed over the groins; a warm bath once in six hours; to be kept constantly nauseated and occasionally vomited by tartarized antimony.

"16*th.*—Exceedingly restless through the night, but somewhat relieved this morning; cough humid, expectoration loose; countenance exhibits great distress, pulse hard and quick; four more leeches applied to trachea; hydrocyanic acid to be continued, bath as yesterday.

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[1] *Boston Medical and Surgical Journal*, vol. xii., p. 206.

"17*th.*—The antimony and mercury have operated powerfully upon the bowels, the dejections being of a dark-green color; the inflammatory action much diminished; expectorates more freely; a blister to be applied over the upper part of thorax and lower part of trachea.

"18*th.*—More comfortable; coughs up small shreds of membrane. The following draught to be given every five hours:

℞. Potassæ nitratis, grana quinque.
Aquæ menthæ pulegii, drachmas quatior.
Vini antimonii tart., guttas quinque.
Tincturæ digitalis, guttas quinque.
Mucilaginis acaciæ; syrupi, sing. drachmam.
M. Solution of tartarized antimony to be discontinued: sinapisms.

"19*th.*—Much improved; mercurial fetor. Submuriate of mercury and mercurial ointment now to be discontinued; pulse 98; desires food.

"20*th.*—Sitting up in bed, generally improved; mouth sore from mercury; was allowed thin arrow-root and gruel; much debilitated.

"21*st.*—Patient much emaciated; large appetite; pulse 80; a small quantity of ether to be given once in four hours, and the arrow-root continued.

"23*d.*—Sent for at 11 A. M. to see patient, and found him *in articulo mortis;* his face and lips pale and livid, short cough, insensible, and died at one o'clock"—and, it might be added, found relief from further medication. One other case of torture, with a less tragic termination, and I have done:

Prof. Mettauer,[1] of Baltimore, gave a child, nineteen months old, twenty grains of tartar-emetic at a single dose, and says: "After this attempt, a third and succeeding doses were prepared and administered in rapid succession; and I was now emboldened to give a heaping teaspoonful of the tartar, employing ipecacuanha and antimonial wine to render fluent so large a portion of tartar;" and in this way he assures us that he proceeded for two hours before any change took place. The reflection is certainly cheering, in view of a possible return to old methods, that Nature provides some of its children with an organism strong enough to resist the onslaughts of physician and disease.

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[1] *Boston Medical and Surgical Journal,* vol. xiv., March 23, 1836.

The opium-treatment has been lately revived by Dr. J. S. Seaton.[1] He uses large doses of opium with ipecac., as occasion may require. This treatment is far from being new. The opium-treatment was first introduced by Mr. Surgeon Kemble,[2] of Warwickshire, in an article to the London *Lancet*. He attributed the worst symptoms of the malady to the spasm. But an anonymous writer in the *Boston Medical and Surgical Journal* says he had been using the same treatment for twenty years previously, and states that, "if practitioners fail in curing croup with opium, it is because they are more afraid of the remedy than of the disease or of death itself." The original Kemble prescription was laudanum, valerian, and syrup of squills.

Sponging in hot water has been highly recommended, and Dr. J. D. Fisher[3] gives some interesting cases treated in that way. But we may err on the other side; for instance, Dr. Fabius, of Amsterdam, says, "the chief object in treating croup is, to avoid debilitating remedies as far as possible." We do not know but that may be the "chief object" in Amsterdam, but in this country our main concern is to have our patients get well.

But we shall find that, in the hyperæmic stage, nothing is better than the gentle emetic of the turpeth mineral.

Dr. Fordyce Barker[4] has recently called the attention of the profession to this remedy. Dr. J. D. Trask,[5] Dr. Bache,[6] and Dr. Geo. B. Wood,[7] attribute the introduction of turpeth mineral to Dr. Hubbard, of Maine, in 1845. This is an error, as it was used as an emetic in croup by Dr. Ware,[8] of Boston, in 1830.

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[1] *See Boston Medical and Surgical Journal*, vol. viii., February 20, 1833.

[2] *American Practitioner*, March, 1870.

[3] *Boston Medical and Surgical Journal*, March 16, 1836.

[4] *American Journal of Obstetrics*, May, 1870.

[5] NEW YORK MEDICAL JOURNAL, vol. xiii., p. 291.

[6] "United States Dispensatory:" article, Hydrargyri Subsulphas flav.

[7] "Practice of Medicine," Philadephia, Therap. and Pharmacol.

[8] *Boston Medical and Surgical Journal*, vol. iii., April, 1830.

Should there be much fever, tr. veratrum viride should be given in sufficient quantity to control the febrile action. To relax the spasm, a warm bath is often beneficial, and an external application may be made to the throat of pounded ice; or warm fomentations may be used, as may be most agreeable to the patient, bearing in mind that either heat or cold, applied continuously, is a sedative; but, should either be used, the same one must be continued until the hyperæmic stage is passed. In the second stage, or stage of exudation, the treatment should be directed to prevent, if possible, the consolidation of the exudate. Emesis will not be so beneficial in this stage, but must be employed if any tendency to suffocation supervenes. It has already been pointed out that it is highly beneficial to have the patient breathe air heavily charged with moisture, and, as lime has the property of dissolving the pseudo-membrane, it is recommended that the vapor used be that produced by the slacking lime. This treatment is equally valuable in the second and third stages of the disease—in the former for the prevention and in the latter for the power of solution, as already stated. Dr. Burge,[1] of Brooklyn, deserves the credit of prominently bringing the use of the vapor of slacking lime before the profession, and several cases have been reported[2] which were treated with remarkable success by this method.

But it not unfrequently happens that all these remedies fail, and the patient goes on from bad to worse, the dyspnœa increases, the danger of suffocation seems imminent, and the patient's countenance assumes a cyanotic hue. If it is determined that there is neither bronchitis nor tracheitis below the point of operation, then it will be advisable, nay imperative, to perform tracheotomy. There are some who recommend this operation, whether bronchitis be present or not; but when it is remembered that the cartilages fade out at the terminal bronchus, that the air-cell is simply a continuation of the lining membrane of the tube, together with its external investing membrane, the tendency of any inflammatory process to extend along the mucous or serous membranes; the thickening and consequent closure of the cell; and also when it is remembered that eight-tenths of all the deaths that occur after tracheotomy are from bronchitis which very often can be directly traced to the wound in the trachea, it will not appear strange that a majority of the profession agree in performing this operation in croup only in obstruction of the larynx, or in the trachea above the point of operation. When an operation is determined upon, it is important that the neck should be sponged in ice-water for a moment or two previous to the operation, for the purpose of diminishing the cervical congestion which is always present. In other respects tracheotomy in croup does not differ from that operation when performed for the removal of a foreign body. Stress has been laid upon the tube used, but whether metal or rubber depends more upon the fancy of the surgeon than any practical difference to the patient.

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[1] New York Medical Journal, July, 1870.

[2] Ibid., vol. xiii., p. 448.

No local treatment must be attempted through the wound. It is important after the operation to keep the air at an elevated, uniform temperature, and it should be loaded with moisture. Anodynes should be administered to control the pain, and for a few days at least the food of the patient should be liquid.

Art. III.—*Morbid Impressions upon the Nervous System the Primary Cause of Disease.*[1] By J. P. Creveling, M. D., Auburn, N. Y.

Centuries have elapsed since medicine has been considered a science; and, of all the sciences, we may justly claim that ours has received the most sound and mature consideration. Our forefathers labored with untiring zeal to delve into the morbid nature of disease; they established theories and clung to them with unyielding tenacity; but modern science has long since disproved them, and they have been abandoned. The laboratory and the microscope have done much to advance pathology, but so far have they come short that medical literature still teems with theories and theoretical speculations. The great germ-theory has swept over the profession, and revolutionized much of the teachings of the older writers; yet this is by no means a new subject. Cullen, in his career, advocated it, and marshaled all his thoughts and investigations into one grand argument. Half a century ago Michell and Monseau stood foremost in its defense, and produced what seemed to them to be unimpeachable evidence of its truth. In our days Saulisbury has entered the arena, and stands unapproached in his realm of Infusoria. Humoralism never occupied the minds of the profession and engrossed so much of their study and talent as to-day. The peccant humors of the ancients still glitter before them; fungi is stamped on every broken-down blood-corpuscle, and every particle of systematic *débris* has been transformed into a living organization. The chemical theory, too, has attracted much attention; and the analyst has labored with untiring zeal to account for all the pathological changes and conditions upon his favorite hypothesis. He may dissolve the compounds into their elementary particles, and the fluids may quickly respond to his tests; he may say certain organs or structures appropriate certain constituents of the normal blood for their support, and prove his assertions by his accurate reactions; but he cannot tell whether certain chemical changes he may detect in disease are the cause of that disease or only a result. Here, then, are two great theories. Now, discrepancies always show us that we are still in the realms of uncertainty. It behooves us, then, to seek some other cause of diseased action. Why not attribute some to the nervous system, the central axis of all vitality? Is it not reasonable to presume it may be the first to respond to morbid impressions? It may seem more scientific to some to study cryptogamic fungi, because they can view them as something organized, while vitalism is entirely beyond our comprehension; we cannot view it with the microscope or cause it to react with the most delicate tests, yet we know it exists; its manifestations we see and recognize. Fungi we may see in substance, but further than that we know nothing about them; their growth and their characteristics have baffled the closest observer. The germs of animal and vegetable life pervade all matter; even in health every organ or system of organs has its own parasites peculiar to its structure.

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[1] Read before the Auburn City Medical Association for discussion, June 1, 1874.

Now, cannot morbid nerve-influence transform these germs into a mature growth that the enthusiastic microscopist might call fungi? The origin of the one is as possible as the other. It is by induction alone that all true logical conclusions are drawn; the true logic of all physical sciences is based upon induction. We know certain diseases or conditions will produce certain effects, under certain circumstances, and that certain impressions upon the nervous system are capable of producing certain results. Now, by analogy we can trace the primary cause of many diseases, at present attributed to other causes, to perverted nerve-influence. Consult the logic of many of these enthusiastic humoralists; in their eager search for microscopic formations they have entirely lost sight of vitalism, the great *animus* of all life, or rather life itself. Life may be said to be matter animated by a vital force. The nervous system is the generator of that force, and, presiding over every molecular change, regulating every nutritive and secretory process, and governing every vital action, may it not be responsible for most of the diseased as well as healthy action? We know that interrupted and perverted nerve-force will produce interrupted or perverted vital action; this is simply according to physiological law. Observation has taught us that certain diseases produce symptoms and lesions peculiar to themselves; yet their real nature we do not know; we see and recognize their manifestations as we do those of vital force, but we do not consider them the cause of the morbid action; we know they are its results, and, if we should find a few microscopic formations, might we not consider them, too, a result? The term blood-poison has been used in its most expanded and comprehensive sense; it has covered every obscure and unsatisfactory disease, and cloaked the ignorant and unscientific. Medicine is not so clear as most other sciences. Geology may tell whether the earth was moulded at one great cast, or whether its hills and vales were caused by its convulsive throes or its volcanic action. Astronomy may peer deep into the starry vault and read the planet-star and its satellites as they whirl through boundless space; but pathology is more profound, its nature requires more mature thought and investigation. Our practice is mostly theoretical, symptomatology being the only portion of our science which may be said to be replete. Much of the teaching and writings of Prof. Saulisbury is contrary to all logical deduction. He has seen animalculæ and cryptogamic fungi feeding upon the vitals of their victim, and written long and elaborate accounts, describing their appearance and nature, while other observers who may justly claim to be his equal in the use of the microscope, assert that he has mistaken the blood-corpuscles and other normal constituents of the blood for infusoria. But, even if this serious error had been made, Prof. Saulisbury's writings would still be of value, for they have shaken other theories to their very centre, and aroused a discussion which has been participated in by some of the most able and talented members of the profession, yet to-day the great mass of investigators is wafted along by humoralism, nervous phenomena always being secondary with them. Physiological observation has taught us that irritation of the base of a nerve will produce functional and organic changes of the parts to which it is distributed, and that irritation or disease of those parts may produce structural changes of the base of a nerve. This, then, must be due to transmitted impression, as the body of the nerve lies between the two extremities.

Now, cannot we account for many of our low congestive fevers on the same basis? An impression is made upon, perhaps, the nerve-centre or base, and is transmitted to the parts to which it is distributed; deranged function ensues, followed, may be, by organic changes. If over-stimulation of a nerve will produce hyper-nutrition of the parts it supplies, why may not peculiar morbid impressions produce their own characteristic lesions? If this is not the case to a great extent, our treatment must be erroneous, as it would be absurd to think that the remedies we generally use are capable of neutralizing the so-called blood-poison; they mostly act upon the nervous system. Say we take rheumatism, the pathology of which of late has been unquestioned: the ancients said it was a peccant humor; modern pathology tells us that humor is lactic acid. Common-sense suggests an alkaline treatment, and we drench our patient with Rochelle salts, and still the disease goes on; we test the secretions, find them all alkaline, and still we find as much rheumatism as before. Why is it? We can certainly neutralize every trace of acid in the blood, and, if lactic acid is the sole cause, ought not our patient to get well? Now, suppose we do have some favorable change during the alkaline treatment, is it impossible to attribute it to any thing but neutralization? Cannot the electric influence generated by the chemical action have a beneficial effect upon the nervous influence of the diseased part; or, by its immediate presence, in some way act upon the *materies morbi*, preventing or modifying its action upon the system?

Again, our patients get well just as soon on an entirely different treatment, say the anodyne: we give a dose of opium, it lessens the susceptibility of the nervous system to the morbid cause or impression, and thereby gives the nerves as well as the diseased parts an opportunity to partially regain their normal action. Or the patient may get well as soon on other treatment directed wholly to the nervous system, as colchicum, by which I have seen inflammatory action reduced in one-fifth the time required by the alkalies to produce any observable effect.

Lastly, I am fully convinced that many of our skin-diseases are of nerve-origin. Some of our authorities believe they are of rheumatic origin, but do not know the origin of rheumatism. Accepting the humoral theory, lactic acid must play an important part in their causation; but I apprehend there are few cases that alkalies alone will materially benefit. Arsenic has been the boasted remedy, and that is one of the very best nerve-tonics, and in this way I believe it acts, rather than by producing any peculiar alterative effect on the skin, as has been claimed. Electricity is one of our most potent remedies, and often succeeds better than all others, applied either to the diseased parts or nerve-centres. Phosphorus and tr. ferri chlor. will sometimes act almost like specifics, and so will some of our nerve-tonics. Clinical observation shows their superiority to other modes of treatment. The various ointments and lotions generally used act principally by excluding the air or soothing the irritated nerve-ramifications, and often sweet-oil will act far better than any alterative unguent. Truly there are arguments in favor of nerve-origin. The nature of an impression that will produce such an eruption of the skin I do not pretend to know. A dose of opium will sometimes produce a rash, and almost intolerable itching, but why it should do so is entirely unexplained : we know that its primary action is upon the nervous system—observation and clinical research have taught us that; but why it should have any preference for that structure, or produce itching, is beyond our knowledge. Life and disease are yet too imperfectly understood to explain many of the conditions or phenomena of either. All that we know of vital force is, that it is an intangible and incomprehensible something, and much of disease and diseased action must be attributed to an interruption or perversion of this force. Vitalism has not yet taken its proper position in the causation of disease. Puerperal convulsions and a number of other diseases now attributed to other causes may some time in the future find their proper classification, when the physiology and pathology of the nervous system are better understood. As long as our etiology is incorrect, our treatment must to a certain extent be erroneous, but we must advance. Humoralism, pregnant with speculations and errors, has so agitated the great minds of the profession, that pathological truth will be more carefully and deliberately sought for. *Authority* no longer holds spellbound the intellectual and thinking portion of the profession ; discrepancies and errors have stimulated each member to investigate for himself, and accept only that portion the logic of which is based upon scientific observations and facts.

ART. IV.—*Infection by Syphilitic Semen.* By ISAAC SMITH, JR., M. D., Fall River, Mass.

DOES syphilitic semen contain the germs necessary to give rise to the evolution of syphilis in a woman, provided she is not *enceinte* by such intercourse? Prof. Bumstead, page 471, third edition of his work, gives us to understand that he thinks the supposition to be reasonable that a female may contract syphilis through the semen of a syphilitic male, the patient having at the time no syphilitic lesion, and without the woman becoming pregnant. But he adds that the conditions necessary to *prove* such infection "have never been fulfilled in a single instance." Believing that I am possessed of facts which will in the future render such an ultimatum untrue, I am incited to record a case in my own practice, which I believe answers all the requirements for proof that the semen of an apparently healthy man, who has had syphilis, *did* in this case transmit the germ of syphilis to the wife. Laying comment aside, I shall endeavor to simply narrate the facts of the case:

In February, 1872, a gentleman called upon me for advice about a sore "he had upon his penis." Upon examination, I found behind the glans penis a circular excavation, with indurated and raised circumference three-fourths of an inch in diameter; said he had had it six weeks; had been under the care of a doctor who said it was only a "chafe." I placed him under mixed treatment and mild citrine-ointment locally, and the chancre healed in about two weeks, leaving a cicatrix. In a few days he called and said that he was "breaking out," and examination revealed the secondary eruption, which in a short time completely covered every part of the body. Treatment was not changed. Salt-water bathing was advised, and in a short time his skin was as fair as before infection. Next, engorgement of the glands both sides of the neck ensued, which was successfully treated by hypodermic injections of iodine, in conjunction with original medicine; one of the glands suppurated, but healed kindly after aspiration and subsequent injection of iodine, almost without cicatrix. The inguinal glands were prominent, but did not require specific treatment. A year passed on, and, disregarding my advice, he was married. I unfortunately assured him, however, that his wife would suffer no detriment *unless she became enceinte.*

In August, 1873, his wife had prolapsus uteri, and he discovered a sore upon the os, which he attributed to friction. I treated the chancre (for such it was), and put her under mixed treatment, i. e. (iod. potass. et hydr. chl. corrosivi, etc.). This chancre healed in about the usual time, and the uterus, having been elevated to its natural position, was retained there by a pessary. Six weeks later I was called to attend her for "rheumatic fever," as her husband called it. She was apparently in the incipient stage of that disease. The temperature was very high, and articular swelling was present at the larger and smaller joints. The urine was intensely acid. I thought proper to put her under the influence of alkaline treatment, omitting other remedies, which was continued until the urine was loaded with ammonio-magnesian phosphates, and alkaline in reaction, during which time perspiration was profuse, and as that subsided the secondary eruption appeared. The mixed treatment was now resumed, and the case progressed favorably; the mucous membrane of the nose was slightly affected, but healed under the stimulus of dilute citrine-ointment.

January, 1874.—The gentleman called to tell me he had caught disease from his wife. I found he had a urethral chancre, which I treated; as yet there are no secondary symptoms. I was called to his wife also two weeks later, and found her suffering fearfully from engorgement of the os uteri, with uterine leucorrhœa, which was treated through the active stage with opiated emollient injections. The active symptoms subsiding, the discharge increased, and I used intra-uterine injections of dilute citrine-ointment, which rapidly caused a cure. Since then she has been free from dysmenorrhœa, which she had suffered from since her first menstruation, at times having to remain in bed a week on account of its severity. She has had three painless menstruations since, and is apparently in perfect health.

She has *never been pregnant;* has never run past her time. The family is socially and pecuniarily of the highest respectability.

I am aware that in the above recital there is food for much speculation. But I must content myself with the duty of recorder. I believe such a connected history ought not to be lost, or treasured up by one alone.

Art. V.—*Experiments on Respiratory Nerve-Centres.* By Prokop Rokitansky, M. D. Translated from proof-sheets of Stricker's "Jahrbuch," vol. i., 1874, by S. H. Chapman, M. D.

These experiments were already completed when I learned, from Pflüger's "Archiv,"[1] of the series of investigations on "Respiratory Centres," conducted by Dr. Gierke in Heidenhain's laboratory. Since, however, we have chosen different roads for our investigations which unite only at their termination, I do not refrain from publishing my work according to my original plan. But I will not recapitulate the historical data which bear upon this question, as it would be difficult to add any thing to what Gierke has already published on this subject.

The method followed in my experiments, so far as regards the exposure of the medulla oblongata, was almost the same as that of Gierke (page 587).

I would like, however, to add something which, while it may, perhaps, seem commonplace to the latter, yet to me appears to be worth noting. It is important to divide the membrana obturatoria lengthwise with a pointed bistoury. In this way one can cut forward as far as the occiput, and backward almost to the atlas.

The operation produces no bleeding. Only once in a while it happens that, when the cut is made to extend quite to the atlas, venous bleeding follows.

This bleeding is by no means dangerous, but it can be avoided by leaving a space uncut next the atlas, the breadth of one or two millimetres. Provided that the membrane be exposed in its greatest breadth, one sees a vein shining through on the border on each side.

These veins lie somewhat deeper than the bony ligaments between which the membrane is stretched, and are also in part covered by them.

Now, if one holds each half-membrane by the cut border with a pincette, it may be cut away with the scissors even to the lateral bones, without disturbing the veins.

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[1] 1873, p. 585.

It is injury to these lateral veins especially that produces the well-known severe bleeding, when section of the spinal cord is made without careful preparation.

Now, if a complete cross-cut of the membrane has been made in the manner above described, the triangular fossa is seen lying with its posterior and pointed portion sufficiently bare to be operated upon.

The vessels running over the cord may be cut in every case, as they never cause severe bleeding.

If it is now desired to completely sever the cord, inasmuch as it now lies exposed, care must be taken to begin the operation with a fine straight pair of scissors.

In this way one can avoid the large lateral veins by inserting the blades between them and the cord. By proceeding with ordinary care, one is able to complete the section without injuring the basal vessels.

If the animals be young, for instance Guinea-pigs, of the age of three months, it is possible by means of the bone-forceps to take away also the posterior portion of the occipital bone without producing hæmorrhage.

In this way is exposed quite a section of the convolution, the extraction of which has always been followed, in my experiments, by bleeding. It is only necessary to wait awhile, however, as it ceases of itself after a short time, and then one obtains a free view of a larger section of the triangular fossa.

I attempted, finally, to lay bare the convolution in its entire length; for example, I marked out the lines of section on the bone by means of red-hot needles, and in fact burnt so deeply as to obliterate the vessels of the skull in the line of section and its immediate vicinity.

By this process the lines of cauterization always united in the anterior angle of the membrana obturatoria. If the latter had been previously dissected off, it was only necessary to lift out of its place with the pincette the piece of bone marked out by the cautery. In most cases this dislocation was followed by severe bleeding, yet sometimes no hæmorrhage took place, and then the field of operation was laid open to view in a beautiful manner. The same mode of procedure was followed for the superior portions of the skull and with the same uncertain result.

It appears that the adhesions between bone and dura mater have much to do with the presence of the hæmorrhage. If the adhesions be loose, the dislocation is an easy and successful operation.

In many cases I was able to check the bleeding by piercing the longitudinal sinus with surgical needles and then tying it. If the sinus were not exposed, if, moreover, a small wound only were made in the skull, and yet so sharp a hæmorrhage took place as to endanger the success of the experiment, I immediately passed a slender knife into the wound and cut through the entire brain to its base. So soon as the base of the brain was reached, the bleeding ceased.

It is not the place here to explain the reason of this peculiar phenomenon. I will only throw out the conjecture that section of the arteries with their consequent contraction might have been the cause of the cessation of hæmorrhage. Such a cessation is, however, not to be relied upon: as soon as the sound is introduced and the cut surface removed, the bleeding returns.

These discoveries at length taught me to make section of the brain by first piercing the thin skull with a long knife made for the purpose, and then cutting down through the brain-substance. As a rule, such a section into the brain-cavity resulted in an unimportant hæmorrhage.

I operated without exception on Guinea-pigs about three months old, lightly narcotized by chloroform or chloral hydrate; the animals were tracheotomized, stretched on their backs and connected to the respiratory and transcribing apparatus by means of a T-formed glass rod, according to the method already used by Hering and Breuer.

I.

Guinea-pigs, whose spinal cords have been divided, continue to respire when poisoned with strychnia.

Section of the medulla oblongata at the point of the calamus scriptorius had always analogous and the expected results. The animals ceased to breathe.

If I now applied artificial respiration for two or three minutes, in order to cause the blood to continue its circulation, and injected .8 cc. of a one-per-cent. solution of strychnia into the abdominal or pectoral cavity, the animal became convulsed after the lapse of a few minutes, and at the same time the transcribing apparatus showed characteristic rhythmical variations of the atmospheric pressure in the thorax.

Since all my experiments to this end produced coinciding results, I am satisfied to reproduce some of the many transcriptions in the following figures. The question could be raised whether these curves represent true respiratory movements.

It is to be answered decidedly in the affirmative, for I opened the abdominal cavities of many animals and could in this way unmistakably observe the contraction of the diaphragm. In the case of some of the animals I dissected off the skin covering the thorax, and removed the muscular tissues to such an extent that the walls consisted simply of ribs and intercostal muscles; in other words the chest-cavities were actually stripped of their outer coverings; still I observed not only diaphragmatic contractions, but also a perfect rising and sinking of the ribs. The animal had therefore breathed, the diaphragm as well as the muscles of the thorax had rhythmically contracted, and the atmospheric pressure in the thorax had produced the corresponding variations.

The conclusion seems natural that we must look to the nerves as the cause of these contractions; for muscular tissue unaffected by nerve-force is not believed to contract with a rhythm, according to our present knowledge.

We must also conclude that these movements are controlled by some nerve-centre, since we deny to the peripheral motor nerve-filaments the power to produce rhythmic action. But, as the medulla oblongata was entirely divided at the point of the calamus scriptorius, we must seek for the respiratory centres in the spinal cord below the fossa, according to the foregoing premises.

Of the question why, if respiratory centres be situated so far down, the animals do not continue to breathe when the cord has been divided at the point of the calamus scriptorius, I need to seek no new solution, after what has already been published by Schlesinger[1] upon the same question in his discussion of the circulatory nerve-centres. I will, however, repeat the entire train of reasoning, because I am able to smoothe the way for some of its difficulties.

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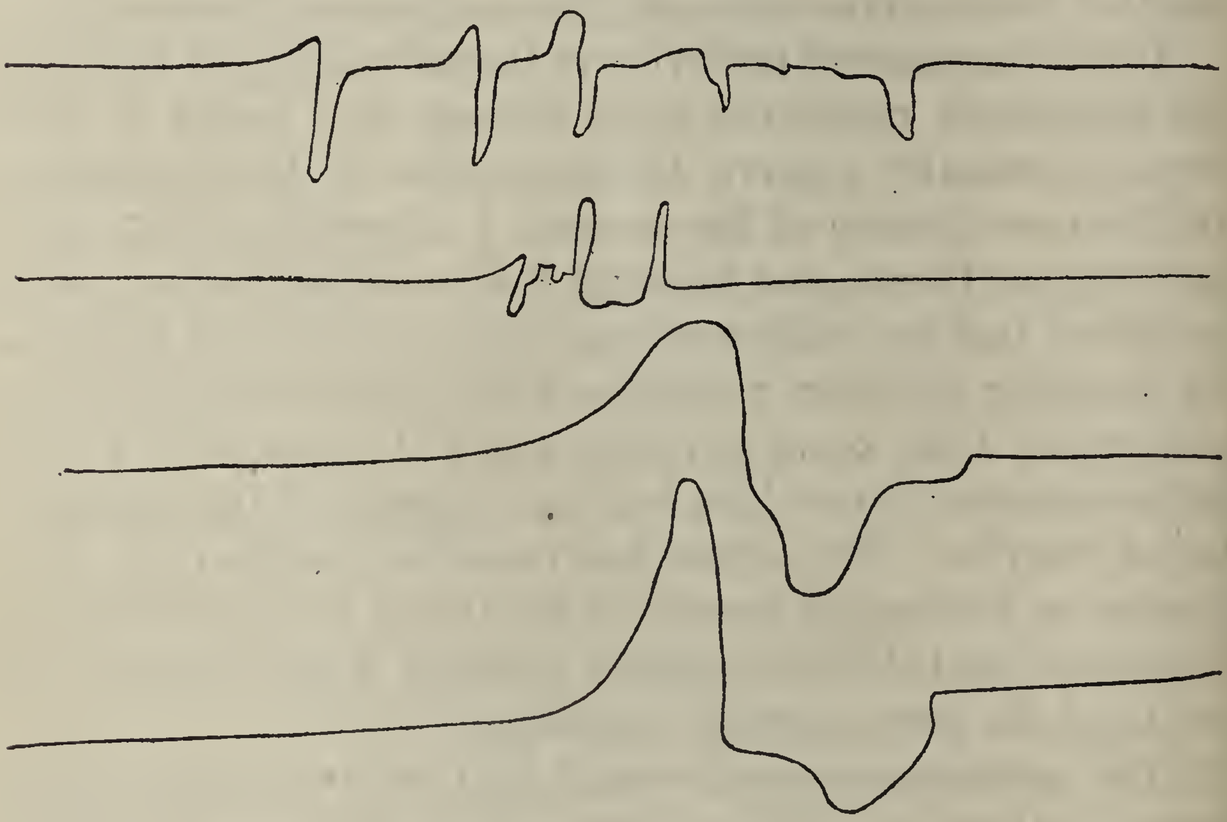
[1] "Jahrbuch," Heft i., 1874, p. 29, and NEW YORK MEDICAL JOURNAL vol. xix., p. 133.

The fact, that, the respiratory centres situated below the calamus scriptorius do not act after section of the medulla oblongata, in no manner proves that these same centres do not act, during life; for it could well happen that they might act, but only so long as they were connected with the medulla oblongata, and with the brain, and that the strychnia might for a few seconds or minutes invest them with a power which they previously acquired from the brain. The future disclosures will throw some light on the validity of this hypothesis.

FIG. 1.



The two upper curves were transcribed by partial pressure during still energetic respiration after section at the point of the calamus scriptorius; the two under curves by total pressure during the last and already very weak respirations after section farther forward.

In both cases a Marey's cardiographwas used. The horizontal portions represent in every case a pause in the respiratory movement, and those below the level, active inspiration. Upon the signification of those portions above the horizontal we will afterward have something to say.

II.

Guinea-pigs, whose medullæ oblongatæ are divided at the posterior border of the pons Varolii, die on account of deficient respiration.

Under this proposition I will select only the following out of a large number of registered cases:

June 10*th.*—Half-grown animal. After complete section directly through the middle of the pons, the animal breathed for a short time quite regularly and frequently; soon it ceased to breathe; now artificial respiration was employed, continued some minutes and then stopped; a few seconds thereafter the animal began of itself to respire, but soon again ceased. The experiment was repeated in the same way and with the same result.

During the dyspnoitic condition of the blood there took place some weak twitchings, but no regular action of the diaphragm. Animal died during the continuance of these phenomena, without convulsions.

June 27*th.*—No. 1. Animal two months old; similar section made; animal died in a short time.

No. 2. Section very oblique through the corpora quadrigemina (from antero-superiorly to postero-inferiorly); the animal respired twice only, then died.

From these cases it is conclusively shown that, with medulla oblongata intact, respirations can still be performed, but that they soon cease and the animals die.

Since one can revive the already weakened heart-pulsation, however, by artificial respiration, the diminution in cardial action could have been the result only of the cessation of respiration; but, as cessation of cardial action is followed by death, the latter must also be considered to have taken place because of the diminished respiration.

If we assume the now current theories to be correct, we must suppose the loss in frequency of respiration and its final complete cessation to be due to this principle, viz., that the respiratory centre has lost its irritability. For the animals frequently begin to respire after a thorough use of artificial respiration and a consequent restoration from an apnoitic condition. Only a few respirations, however, take place before the animals again cease to breathe, unless by artificial respiration we obtain the same series of phenomena as before.

Respiratory centres must actually exist, otherwise the animals could not breathe at all. The failure, therefore, must be either in irritation or in irritability. But, since the dyspnoitic blood acts as an irritant—and in these cases there can be no lack of this irritation—it must be the irritability which is diminished after section of the cord. The following hypothesis, then, seems to be correct, viz., that the irritability which has already been weakened by injury to the cord, and in consequence of which the animal respires imperfectly, is still more diminished by the resulting loss to the blood of oxygen, and therefore the animal ceases to breathe; notwithstanding the accumulated irritation of dyspnoitic blood, the animal not only ceases to breathe, but also dies without convulsions.

III.

Animals whose medullæ oblongatæ have been divided at the posterior border of the pons Varolii, and which have ceased to breathe, begin again to respire after injection of a solution of strychnia.

June 30*th.*—Guinea-pig ten weeks old; cord cut at the posterior border of the pons; immediately after, the animal performed only expirations (this phenomenon will be after ward discussed); at length entire cessation of respiratory movement; injection of .8 cc. of a one-per-cent. solution of strychnia; respiratory movements very strong.

July 11*th.*—Animal three months old; the incision goes close to the posterior border of the corpora quadrigemina obliquely from postero-superiorly to antero-inferiorly; respiration rapid, but soon ceases; artificial respiration now used; during its continuance strychnia injected and then artificial respiration stopped; after one minute very energetic respiratory movements follow; abdomen opened in order to observe the diaphragm; the thorax is also denuded of its muscular tissue.

July 7*th.*—Guinea-pig three months old; extraction of the hemispheres followed by severe hæmorrhage; animal breathes frequently and regularly; now incision made through the middle of the corpora quadrigemina; animal lies half a minute without breathing, and then begins again to respire with a peculiar rhythm, which is later to be described; cardial action weak; artificial respiration strengthens this action, and injection of strychnia produces frequent and powerful respiratory movements.

July 8th.—Guinea-pig three months old; section through the corpora quadrigemina; respiration ceases, but begins again with long intervals; strychnia produces especially energetic respiratory movements.

Experiments II. and III. have been cited as giving data representative of a certain class of cases which are likewise analogous to those of Experiment I.

In the latter, as in the former, the animals ceased to breathe after section of the cord, although in Case I. always immediately, in Cases II. and III. seldom immediately, but as a rule a few seconds or minutes after section of the cord. Without straining the signification of the data obtained from these representative cases, we are able to systematize them so as to be able to affirm that—

Section of the cord, at the points previously mentioned, disorders the respiration. Strychnia temporarily removes this disarrangement.

Since we have observed, however, in Case II., that the disorder produced by separation of the medulla oblongata from the hemispheres consists in this only, that the excitability of the respiratory centres located in the former is so much diminished as to be entirely unaffected, either immediately or after some minutes, by the irritants usually present, therefore the following supposition has lost all claim to acceptance, viz., that "below the fourth ventricle are to be found no respiratory nerve-centres, because animals no longer breathe after separation of the spinal cord from the medulla and brain."

When previously, under Case II., I showed that animals die from diminished respiration after section through the pons, I should have defined what were the limits of the space whose section produces death, as a rule, in this manner.

Usually, this happens when section is made into the anterior corpora quadrigemina, or into the region still farther forward in the neighborhood of the thalamus opticus.

In short, sections which are made within the extension of the spinal cord into the brain (always provided that the section be complete) leave the respiration undisturbed, in so far that the animals continue to live; at the same time, however, they breathe in a very peculiar manner as a consequence, the most interesting point concerning which consists in the greatly-diminished frequency.

What was said of Case II. also holds good in these last cases, viz., that the animals die from diminished respiration. I do not think it possible, from this variation in the phenomena, to define a precise limit which, if it be reached by the section, no longer interferes with the respiration in the previously-given signification.

I only know it to be true that one can completely extirpate the hemispheres without causing death by diminished respiration.

On the other hand, I can assert that, when the operation of slicing off the hemispheres until the posterior corpora quadrigemina are reached, is successfully accomplished, the animals without exception die with the phenomena given under Case II. When this region is reached, the animals, as has been already said, either immediately cease to breathe, or the respiration takes on that peculiar type of which I wish now to speak.

In the adjoining figures, which give a graphic representation of such types, the horizontal portions correspond to the pauses.

Upon these I have nothing further to remark than that they indicate an entire minute and more. In most cases the pause is interrupted by an active inspiration.

After inspiration has reached its deepest point, expiration follows more or less quickly, and extends so far that the transcriber rises as much above, as previously it was below the horizontal.

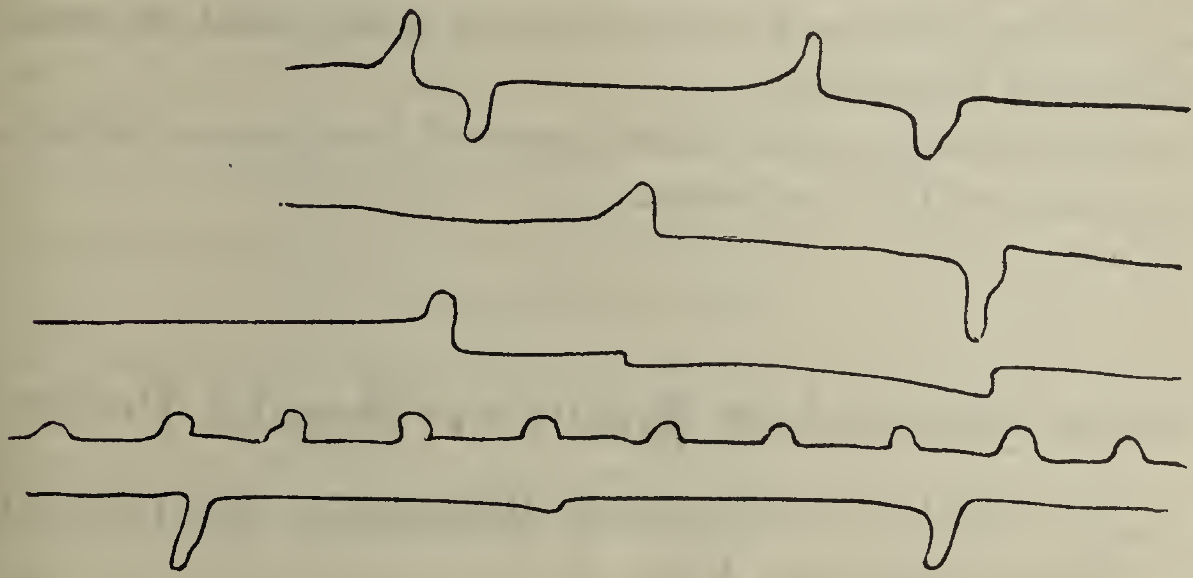
Then it returns to its middle course in order to write again in the horizontal position, until a new respiration comes.

Frequently, however, the pen, on its return from the inspiration, remains in the middle course, writes a short horizontal section and then rises.

In other cases it happens that the inspiration is very shallow, the variation below the horizontal being slight, often scarcely perceptible, while that above the horizontal is quite marked. Finally, it sometimes happens that the pen rises several times in succession above the horizontal.

I cannot in words sufficiently describe the many variations which occur within the limits of the principal types portrayed; from the woodcuts, however, it will be apparent in what way they vary.

Fig. 2.



These five curves were transcribed without injection of strychnia. The two under curves in Fig. 1 were transcribed with strychnia-poisoning, the section being made in the region of the corpora quadrigemina.

If the supposition be correct that the horizontal portion indicates the highest position of the diaphragm, then the variations above the horizontal must be considered to be produced by the expiration.

This would lead to an important corollary, viz., that the active expiration is able to take place separately from the passive; or, in other words, that on the one side the inspirators and on the other the expirators can act independently and at intervals. It must be observed, however, that the case may be different. It is conceivable that the horizontal portion may not correspond to the highest, but to the medial position of the diaphragm, and that the diaphragm rests at this middle point.

The variation downward would then represent the passage from the medial position to the strongest contraction; the variation upward, the passage from the same position of rest to the greatest relaxation.

In short, the sinking of the pen would always indicate a contraction, its rising always a relaxation of the diaphragm, and there could be no variation from this rule whether the pen writes above or below the horizontal.

We are led to this assumption by the following, viz., that the curve rises above the horizontal quite as much after complete severance of the abdominal muscles as before their division.

Observation of the diaphragm from the abdominal cavity has, however, disclosed nothing which could assist in establishing this hypothesis.

On the contrary, the pauses appeared to represent the highest position of the diaphragm.

Clinical Records from Private and Hospital Practice.

I.—*Ante-Uterine Sub-Peritoneal Hæmatocele.* By Henry O. Marcy, Cambridge, Mass.

Mrs. B., aged thirty years, a strong, well-developed woman, was delivered of her first child on the 18th of May, after a somewhat prolonged but not especially severe labor. The only complication was a rigid condition of the perinæum, which resulted in a partial laceration. This was immediately brought together with silver-wire sutures. Complete union resulted, and the stitches were removed on the tenth day. Lactation supervened normally, and there were no marked uterine or abdominal pains. More than usual restriction of motion was observed, because of the ruptured perinæum. Fifteen days after delivery (June 3d), she was suddenly seized with a sharp pain just to the right of the median line above the pubes, of a most excruciating character, followed by partial faintness. No unusual exertion had preceded the suffering, except slight straining at stool. I saw the patient soon after seizure, when, at the point of pain, there was considerable tenderness, but no especial abdominal fullness was then noticed. The patient was anxious and depressed, the pulse small and rapid. A full opiate, hot fomentations, absolute quiet, etc. Some hours later Mrs. B. was quite pallid and faint, pulse very small and weak, extremities cold, perceptions clear, and complained of considerable pain in abdomen, with feeling of weight and fullness.

An ovoid-shaped, fluctuating tumor, nearly or quite on the median line, distended the abdomen to a point somewhat above the umbilicus, the patient being nearly as large as before delivery.

Was it an over-distended bladder? A male catheter was introduced with difficulty, and only by carrying the curve directly backward. Urine had frequently passed during the day in small quantities, and the bladder scarcely contained an ounce. Was it the uterus? Anteriorly the floor of the vagina had a soft, fluctuating feel, evidently transferred from the superincumbent mass. The uterus could be felt in nearly its whole outline, retroverted, and lying in Douglas's fossa. The patient was altogether too seriously ill to allow of a more extended examination at this time. She slowly rallied from her condition of extreme exhaustion; there was only a very slight elevation of temperature, and no inflammatory symptoms supervened.

June 5th.—Dr. W. W. Wellington and myself made a more thorough examination. The patient was extremely weak, and complained much of local heaviness and weight. The uterus was retroverted, well contracted, and measured scarcely more than three inches in depth.

The tumor retained the same regular outline as at first, except being perhaps a little flattened in its antero-posterior diameter, and there was very little change in position by turning from side to side. Fluctuation was undoubted, but less distinct than upon the first day. The patient bore every appearance of excessive loss of blood, and our diagnosis was extra-peritoneal perimetric hæmatocele.

At the end of a week the tumor seemed something firmer, probably due to more or less complete coagulation.

30th.—Patient is considerably improved in general condition, but still confined to bed. No inflammatory symptoms have at any time appeared.

The tumor has not much decreased in size, the patient measuring at umbilicus thirty-eight inches in circumference, and, four inches below, forty and one-fourth inches. Fluctuation clearly defined.

So much time having elapsed, and no absorption taken place, the contents softened. I thought it wise to give the patient the benefit of operative interference, deeming a rupture of the sac imminent as well as dangerous from the possibilities of septic poisoning, etc. It seemed hopeless that this immense mass should be removed except by spontaneous or artificial discharge. Much to my disappointment Dr. Wellington counseled delay, owing to the improvement in the general condition of the patient.

July 9th.—The circumference was thirty-eight inches.

August 3d.—Thirty-six inches. Mrs. B. continued to slowly improve, could walk with some difficulty; complained of soreness and tenderness. Spent August and September in the country. During the autumn the improvement was more rapid, and convalescence was fairly reëstablished in early winter. April following I find the following notes:

General health good; menses regular and of normal character. No leucorrhœa. Bowels regular. Has at times sharp pelvic pains on walking. Uterus is movable, slightly retroverted, deflected to the right, and two and a half inches deep. About an inch to the right of the median line, and anterior to and loosely connected with the uterus, lies a hard, flattened mass, about the size of a small orange. Some months later the patient remained much the same, except that this hard mass had diminished in size, perhaps not larger than an English walnut.

Extra or sub-peritoneal hæmatocele is certainly rare. Its occurrence has even been denied by Aran, Voisin, and others. Bernutz contends that the extra-peritoneal effusions are thrombi, and only result from labor. Aran bases his objections upon a clinical distinction, and affirms that there are no sub-peritoneal perimetric blood-tumors at all important in size, so as to become worthy of consideration with intra-peritoneal tumors. They cannot become large, because they are limited within the fibro-cellular layer, covered in by the peritonæum.

Nonat, Becquerel, Huguier, and Robert, all maintain that extra-peritoneal hæmatocele may occur. Prof. Simpson, in his work on "Diseases of Women," gives notes of a *post-mortem* examination with a diagram. He says: "On dissection, I found the reflexion of the peritonæum between the uterus and rectum raised up, and a large mass of broken coagula of blood formed the tumor, having been extravasated behind the peritonæum, forming the posterior covering of the broad ligaments, and, as it accumulated, having separated and pushed before it that portion of peritonæum, and the utero-rectal fold of this membrane.

Prast cites two cases, in one of which the blood was effused between the layers of the broad ligaments, and in the other it dissected up the connective tissue behind the uterus.

Dr. Barnes quotes a case from Becquerel in which more than two pounds of blood were found outside the peritonæum, the blood having pushed its way between the different organs and displaced them all.

Ante-uterine extra-peritoneal hæmatocele is yet more rare. Dr. Thomas ("Diseases of Women," page 477) says: "Nonat dogmatically announces that the uterus is never found between the tumor and rectum, that is to say, behind the mass of blood; but Chassaignac reports a case in which the saguineous collection existed entirely between the bladder and uterus, and consequently must have forced the organ backward." Dr. Barnes reports two cases in which the tumor was the size of a small orange, throwing the fundus uteri backward. They subsequently entirely disappeared.

In *résumé* of our case above reported, we submit that the general symptoms—sudden appearance, pallor, prostration, and slow absorption—prove that this enormous tumor could have been no other than of blood-character, while its defined outline, encysted from the first, non-development of peritoneal inflammation, so uniformly present in intra-peritoneal effusion, absence of fluid in the retro-uterine space, and subsequent history, are in evidence of its being of extra-uterine character; while the depressed bladder and retroverted uterus, with the position of the resulting cicatricial tissue, mark its point of origin as ante-uterine. Its large dimensions were rendered possible by the relaxed conditions of the connective tissue incident to the recent delivery of the patient.

II.—*Obstetric Cases in Practice among the Chinese.* By J. G. Kerr, M. D.

On the 17th of January, 1869, I was called to see a woman living near the Temple of the Five Hundred Genii, in the western suburbs of Canton. She had been in labor for two days, and was much exhausted. The case had been one of breech-presentation, and, after the body was born, the midwife had used so much force in trying to deliver the head that the neck parted, and the head was left in the vagina. For this emergency Chinese science and skill afforded no remedy, and I was sent for.

I attempted to apply the forceps, but the head had been so much broken that the instrument slipped off. A hook was then fastened into the vertebra of the neck, and the delivery was easily accomplished.

As my services were required only for the mechanical process of extracting the head, I saw the patient no more, but heard that she recovered.

Case II.—On the 22d of June, 1873, I was called to see the same woman in labor. The case was again a breech-presentation, and labor had continued for three days. When I saw her, the body had been born for some time and had turned black. With some difficulty the shoulders and arms were brought down, but the head could not be delivered by any traction which the neck would stand. Several attempts were made to apply the forceps, but the instrument could not be made to embrace the head. Finally, the fingers of the left hand were fixed in the socket of the eye, and by strong and continued traction, the head was brought away. It was found distended to nearly double the natural size by hydrocephalus, which explained all the difficulty of the case.

Case III.—On the 5th of April, 1874, I was called to see a woman living near the Temple devoted to the worship of the Emperor. The patient, a strong, healthy woman, had been in labor for forty-eight hours. I found the head torn from the body, and the arms hanging by shreds of skin from the ragged trunk of the fœtus. A rough iron hook was shown me, which had been used. The midwives had fled before my arrival. The pains were strong, and a soft mass distended the labia at each pain, but it could not be expelled. Suspecting a collection of gas, I plunged my finger into the mutilated chest of the child, and a quantity of gas and fluid was expelled, and immediately the body was born. The abdomen of the fœtus was found to have been enormously distended with fluid, which rendered it impossible for it to be born. The large size of the woman before her delivery had led herself and friends to the belief that she was pregnant with twins.

On opening the abdomen of the child, I found the peritoneal cavity still containing a large quantity of fluid. A second cavity, confined to the pelvis and pubic region, was separated, by a thick wall, from the peritoneal cavity. In this there must have been over a quart of darkish fluid. The anus was imperforate, and the male organs were imperfectly developed. The specimen is preserved in the museum of the Medical Missionary Society's Hospital, Canton.

III.—*Three Cases of the Hypodermic Use of Quinine.*

By Alfred A. Woodhull, Assistant Surgeon, United States Army, McPherson Barracks, Atlanta, Ga.

Influenced by the paper of Dr. F. D. Lente, in the New York Medical Journal for March, 1874, upon the hypodermic use of quinine, I prepared a solution according to his formula, of the strength of about six grains to the drachm. (℞. Quin. disulph. gr. l, acid. sulph. dil. ♏. c, acid. carbol. liq. ♏. v, aquæ f. ℥j.) It is easily made, and is clear and very fluid.

Case I.—Early in June I made several hypodermic injections with it in a case of very obstinate quartan intermittent, with about the same results upon the disease as follows the oral administration; the paroxysms were controlled in a degree, but the general condition was not improved. At this stage the instrument broke, and shortly afterward the man was discharged by expiration of service. The only immediate local effect at each puncture was the death of the skin and its discoloration over a spot about a fourth of an inch in diameter. I fear that, after he left the service, consequences similar to those reported below developed.

Case II.—Private J. S., Company I, Second Infantry, being on sick report with gonorrhœa, was attacked, 31st July, with quotidian intermittent. For five days he took by the mouth from twelve to fifteen grains of quinine. On the sixth day the disease did not manifest itself, but, recurring on the seventh day, he was given a fluiddrachm of the solution hypodermically. This was repeated on the two following days, and on the third day it was given morning and night; the chill then ceased, and did not return. Each drachm required three punctures, which were made in the hips, laterally rather than posteriorly.

In this case every injection was followed by the local death and sloughing of the tissue infiltrated, the sloughs being circular, and varying from three-fourths of an inch to an inch and a quarter in diameter. These sores gave the man some pain and considerable inconvenience; the discharge was annoying, the tenderness was not slight; he could lie down on neither side, and he was not in a condition to perform his ordinary military duties. This state lasted for five weeks, when he left the post with his company, although barely fit for marching.

Case III.—Private B. T. A., Company A, Second Infantry, early in August received six fluiddrachms of the same solution hypodermically during four days, under mistaken diagnosis on my part, the prodromata of a mild attack of typhoid fever having been misinterpreted as the somewhat common symptoms of not well-developed ague. This man passed regularly through the ordinary course of the fever, but fourteen of the injections were followed by local sloughs, as in the preceding case. The worst consequence was compelling him to lie upon the back rather than upon the side; but at this date, six weeks afterward, although he is quite convalescent from the disease, and is rapidly acquiring strength, the sores are still annoying.

On account of these results, I have made no further use of this method.

Notes of Hospital Practice.

BELLEVUE HOSPITAL, NEW YORK.

Extensive Abscess of Liver simulating Empyema.—There died recently, in hospital, a case of abscess of the liver, which, in some respects, was an anomaly.

To such dimensions had the abscess attained that it dislocated, to a marked extent, all of the thoracic viscera, and yielded many of the signs of an accumulation of fluid in the pleura. The history of the case is briefly as follows:

The patient was a woman who, two years previously, had what was called inflammation of the bowels, from which she rallied completely. On September 24th, was exposed to cold, and soon after complained of a dull pain in the right shoulder. There was no cough, and but slight dyspnœa on a long inspiration. The symptoms were not specially severe, but sufficiently so to keep her confined to bed.

On October 6th, was admitted to hospital. Her general appearance was such as to lead one to suppose her strong and healthy in every respect. On making a physical examination of the chest, it was found that on the right side anteriorly there were flatness and absence of voice-sounds from the third rib. On the left side flatness was found over the lower two inches of the chest.

8th.—Temperature 101° in the morning and 102° in the evening. At 8.15 P. M. she had a well-pronounced chill, which passed away in an hour or so.

9th, 3.30 A. M.—The house-physician, Dr. Chapin, was called up and found the patient moribund and in a state of active delirium, screaming at the top of her voice. At 4.30 A. M. she was dead.

Autopsy.—The concavity of the diaphragm was pushed by the distended liver as far as the third rib on the right side, and the fourth rib on the left.

The abscess was found to involve the right and left lobes, and on removal the walls were so thin that it ruptured. It is difficult to say whether this rupture began before death and was its immediate cause, or was altogether the result of the removal.

The pleura on the right side contained considerable serum. The large intestine was somewhat thickened, but no ulcerations nor cicatrices were discovered.

Fracture of Spinous Processes of Vertebræ. *Seventh Cervical Vertebra.*—Some time ago a patient entered with complete paralysis, and on examination the spinous process of the vertebra prominens was found to be fractured.

The general paralysis soon improved, but in the right arm the paralysis yet persists.

The inference is, that there was an extravasation into the meninges at the place of fracture, together with injury to the trunks of some of the nerves going to form the brachial plexus on that side.

The patient received the injury by being thrown down and striking on the head and neck.

Seventh Dorsal Vertebra, with a Sequel of Caries of Spine.—This patient was a woman about forty years of age. She fell into an excavation, and entered the hospital suffering from retention of urine. An examination of her back revealed a fracture of the seventh dorsal vertebra. After four or five days the retention disappeared. It is now several months since the injury, and she has returned to the hospital suffering from the angular deformity characteristic of caries of the vertebræ.

NEW YORK EYE AND EAR INFIRMARY.

Injuries to the Eye from Caustics. *By Nitric Acid.*—The patient was injured by the bursting of a bottle of nitric-acid, but it was difficult to say how much entered the eye. When he was seen at the Infirmary, the day after the injury, the lids were somewhat swollen, and on everting them there was found considerable chemosis, with conjunctivitis.

A whitish eschar was also noticed extending from the lower part of the globe on to the cornea, to the extent of two or three lines.

A similar eschar was detected on the inner side of the conjunctival surface of the upper lid. The cornea was so hazy that the iris was not visible. It is now about five months since the patient came under observation. At first hot fomentations were applied with the installation of atropine, but at present a ten-grain solution of nitrate of silver is applied to the lids on account of thickening. The present condition is rather interesting. There is a traumatic pterygium extending from the original site of the eschar, inferiorly to the middle of the cornea, and covering half the pupil. Above, there is an adhesion of the upper lid of the globe at the seat of the old eschar, impeding the action of the globe downward and outward. The pterygium and symblepharon, or adhesion of the lid, will be removed by an operation.

By Caustic Potash.—Patient accidentally threw some caustic potash into his right eye, and appeared, forty-eight hours after, at the Infirmary, complaining of much pain.

The lids were slightly swollen, conjunctiva much inflamed, with a slight amount of chemosis. Cornea quite hazy. A slight eschar three lines in extent was found on the lower part of the globe, extending as far as the lumbus cornea. The treatment consisted in the use of atropine.

It is now three months since the injury. There is a small traumatic pterygium extending from the old eschar into the cornea to the extent of two lines.

These two cases go to sustain Arlt's view of pterygium: that it consists of a slight abrasion or ulcer existing at the edge of the cornea, and, the conjunctiva being relaxed and excoriated, falls against it and becomes attached and dragged forward.

CHARITY HOSPITAL, NEW YORK.

Tetanus treated by Nitrite of Amyl.—The patient was a convict at the penitentiary on Blackwell's Island, and under charge of Dr. N. F. Curtis, of the Charity Hospital staff. Three days before tetanic symptoms set in, had received an injury on the skin from a fragment of stone. Beyond the wound no signs of trouble manifested themselves till the attack was induced by exposure to cold. The first symptom noticed was a loss of consciousness; but it proved, from the after-history of the case, that this was not complete, as the patient, during the paroxysm, suffered severe pain in the wound, with darting flashes upward. When examined next day by the physician, tetanus was well marked, but, after the administration of five drops of the nitrite of amyl by inhalation, the muscles were very much relaxed, and the patient decidedly relieved.

Ten minims of Magendie's solution were given hypodermically afterward, and followed by a hot-air bath. Next morning the case was so far relieved as to allow of the mouth being opened one-fourth of an inch.

The patient never had epilepsy. The case was of considerable interest, in showing the immediate benefit from the inhalation of the nitrite of amyl, not only in checking the muscular spasms, but also in quieting the pain.

Transfusion.—An error in regard to Dr. Howe's operation crept into the report for last month. Dr. Howe does not expose the vein of the donor, but plunges the needle directly into the distended vein through the skin. The vein of the patient is only laid bare in those cases where, from exsanguination, the vein cannot be detected through the skin.

ROOSEVELT HOSPITAL.

Cancer of Pylorus.—The patient was a laborer, aged fifty-five years, and entered the hospital July 29th. Nine months previous complained of pain at the epigastrium, with nausea and vomiting some time after eating. He vomited liquid nourishment as freely as solid. There never was any vomiting of blood.

When he entered the hospital, there was marked cachexia, and on examination a tumor over the region of the stomach was discovered. A cathartic was given, and the tumor disappeared, proving it to have no relation with the disease.

After he entered the hospital, and till the day of his death, the nausea and vomiting did not return.

The strength of the patient gradually began to give way, but one month before death rallied very considerably. The appetite was improved, and continued so for two weeks, when he developed diarrhœa, which continued two weeks, and ended in death. There was no febrile element at any time.

Autopsy.—The pylorus was thickened to the extent of half an inch, with a cancerous deposit. No traces of it were discovered in the glands or any other of the viscera.

The treatment of the case consisted in the administration of milk solely, as an article of diet.

It is interesting to know that in two or three cases of cancer of pylorus observed at this hospital, nausea and vomiting did not present themselves as symptoms, and in the case recorded above, the pain was not a noted symptom.

Proceedings of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, September 28, 1874.

DR. ELLSWORTH ELIOT, President.

THE first meeting of the Society since the summer vacation took place in the College of Physicians and Surgeons, on Monday evening, September 28th. Nominations of officers and delegates for the ensuing year took place, after which the paper of the evening was read by T. A. EMMET, M. D., on "Laceration of the Cervix Uteri as a Frequent and Unrecognized Cause of Disease."

Dr. EMMET was of opinion that lacerations of the cervix uteri in the median line from before backward are very common as a result of parturition, but, from the fact that the parts naturally remain in position, union takes place readily.

In multipara the commonest site is the anterior lip. If, however, the laceration is extensive, it may run on and involve the bladder, causing vesico-vaginal fistula. On the other hand, if the laceration is posteriorly, it is liable to extend into the connective tissue, and result in a cicatricial band, which, when contracting, will drag the uterus down.

That class of lacerations which come for treatment, and are liable to be not recognized as such, are those taking place laterally.

The anterior lip slides forward in the axis of the vagina, while the posterior passes into the *cul-de-sac.* In this manner the tissues roll out and settle down on the floor of the pelvis. As fatty degeneration progresses, the parts get flattened out, and, after a time, lose all appearance of laceration, but in many cases the surface of the neck does not heal, and as a result there is what is erroneously considered to be an ulceration of the os uteri. This may be proved by taking a tenaculum in either hand, and drawing together the two sides of the laceration, when, instead of the irregular os and cervix uteri, we have them relatively in a natural condition.

Cases of subinvolution, congestion, etc., which defy mechanical and ordinary surgical treatment, yield readily when the lacerated sides are denuded, brought together, and united by sutures.

Dr. Emmet recited the history of the first case in which he recognized this condition of affairs. It will be found at length in his article on "The Philosophy of Uterine Disease," published in the July number of this Journal.

Dr. Marion Sims: "The obligations of the profession are due Dr. Emmet for his successful labors on this subject; I consider that perfection is obtained in the operation, for I do not think it is susceptible of improvement. It is original, and must be considered a marked step in the progress of gynæcology. I well recollect the patient on whom he first operated. She had been under treatment for a length of time for erosion of the cervix, when she fell into his hands, and, in that case, he discovered the true pathology of the disease. I have never seen any danger from the operation, and Dr. Emmet says that in all the cases that have come under his observation, somewhere about two hundred, there was only one of pelvic cellulitis."

Dr. SIMS moved a formal vote of thanks to Dr. Emmet, which was carried unanimously, and presented to him by the PRESIDENT.

Dr. HANKS gave an analysis of the cases in the uterine department of Dr. Smith's Dispensary from April to August of the present year, and found eight and a half of them were lacerations of the cervix.

Dr. LUSK drew attention to the fact that rapid dilatation by means of a Barnes dilator is apt to cause laceration of the neck; also, that, in many cases where there is apparently a freely-dilated os uteri, the introduction of the forceps proves the mistake, and results in laceration, which in all probability is not detected at the time of delivery.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 15, 1874.

AUSTIN FLINT, M. D., President, in the chair.

THE PRESIDENT introduced to the Academy, in a few appropriate words, Mr. ERICHSEN, of London. He also welcomed Dr. JAMES P. WHITE, of Buffalo, who recently was elected a corresponding Fellow. Dr. WHITE replied, thanking the President and Fellows for the honor tendered him.

The paper of the evening, on "Anchylosis," was then read by Dr. LEWIS A. SAYRE, and was substantially as follows:

Anchylosis is derived from a Greek word, signifying *crooked*, and signifies a loss of motion in a joint. It is divided into two varieties: 1. True, osseous, or complete; 2. False, fibrous, or incomplete.

In the first variety there is an absolute consolidation of the articulation, with no motion, and in the second there is usually limited motion, though to a degree barely appreciable in some cases.

Anchylosis is most common in ginglymoid articulations, though it may occur in any of the joints. It seldom happens that more than one joint is involved, but there are cases where two and even more are anchylosed. One case of morbus coxarius, that was treated by the wire-breeches, developed, during the time that the apparatus was applied, anchylosis of the hip, knee, and ankle of the opposite side. This case was a valuable lesson as to the effects of long-continued rest.

In old age anchylosis of the ribs with the vertebræ and sternum is the rule. Anchylosis is not a disease itself, but may be the result of disease in any of the joints. It is sometimes the best result we can get, and then the judgment of the surgeon must dictate the best available position, such as the flexed elbow and the straight knee, the future usefulness of the limb being the guide. It is from the neglect of this latter fact that surgical interference is most commonly required, particularly as regards the knee.

In chronic inflammation of a joint, the reflex irritation acts on the muscles, causing contraction and distortion of the limb, and in this condition, to avoid such an issue, we must have recourse to extension and counter-extension. If, as frequently happens, the case is left to itself and consolidation takes place, it becomes necessary to try and make a new joint, and it is important to know whether we have to do with a case of fibrous or osseous anchylosis. If fibrous, it may be broken up, but, if true, we must make a section of the bone. It is in many cases excessively difficult to detect any motion in a fibrous anchylosis, but there is one fact of great importance in throwing light on this subject, and that is that, on the day after the manipulation, much pain is felt if fibrous, and none at all if it is osseous.

The case in which I first detected this, was a patient in Bellevue Hospital. She was examined, under an anæsthetic, by Drs. Van Buren, James R. Wood, and others, and, to all appearances, we had to do with a case of osseous fusion. Next day there was much pain in the joint, and that convinced me that it could not be bony. I afterward proved the correctness of my views by making subcutaneous section of the muscles and fascia, and breaking up the adhesions. Extension was kept up, the parts maintained at rest, and eventually she recovered, with a movable joint. Some time afterward she was delivered of a healthy child by the late Dr. George T. Elliot.

In the breaking up of fibrous joints, it is the better plan to thoroughly anæsthetize the patient and complete the operation at once. The gradual method causes irritation, without any compensating benefit. The method of operating is to first find the muscles and fasciæ that are put on the stretch when the limb is endeavored to be extended, and, if possible, divide them subcutaneously a few days before the operation itself is attempted.

In attempting the *brisement* force, the patient is to be thoroughly anæsthetized. The surgeon then grasps the extremity of the limb and flexes and extends till he has got free motion in all the normal movements. One of the commonest causes of failure comes from the surgeon stopping too soon in his manipulations, hoping after a time to continue them, but the subsequent irritation and inflammation around the joint prevent any interference till they have subsided. Inflammation as a sequence to the operation is to be prevented, and it is best done so by applying adhesive straps around the toes in lieu of the bandage, first having padded the inequalities, and continuing upward with the roller-bandage. Adhesive straps are so applied also as to allow of the application of a weight to the foot for counter-extension. When the bandage reaches the popliteal space, that also is to be padded, and in carrying it up the thigh a piece of sponge is to be placed over the track of the femoral artery so as to partially impede the arterial current. The limb is then kept quiet in a splint, with absolute rest in bed.

Ice-bags are applied around the joint as an additional aid. In six or seven days the dressings are removed, slight motion made, and the dressings reapplied as before, with the exception of the sponge on the femoral artery. As a result of the operation there may be ecchymosis, but never suppuration, and, of all the cases I have operated on, there has never been a resulting synovitis.

After a few more days daily motions are made, and an apparatus applied, so that the patient is enabled to do it himself.

When the anchylosis consists of osseous fusion, it becomes necessary to exsect a portion of the bone.

Rhea Barton, in Philadelphia, first performed this operation, by taking a wedge-shaped portion of bone out of the shaft, and keeping up passive motion. Gurdon Buck, in this city, modified the operation in 1852, by making it through the articulation.

Adams, of London, has again simplified it by making a simple section of the bone. Dr. Sands, of this city, has repeated this operation. My own method of operating is to exsect a portion of the bone, leaving the extremities convex. I am afraid, when simple section of the bone is made, that sooner or later anchylosis will be again established.

Dr. SAYRE exhibited several cases showing in the knee motion to the extent of ninety degrees, and in the thigh sufficient for all practical purposes.

On motion of Dr. FINNEL, Mr. Erichsen was asked to kindly favor the Academy with a few remarks.

Mr. ERICHSEN: "I confess that, in the able address of Dr. Sayre, my attention has been directed to some points quite novel to me. I refer to the existence of pain subsequent to manipulations in cases of fibrous anchylosis. In my practice, I have entirely overlooked the matter, and have relied for diagnosis on manipulation while the patient was under the influence of an anæsthetic. I grasp the joint securely, placing the thumb over the articulation, and allow an assistant to move the extremity of the limb.

"I can conceive, however, of cases where, by this means, no motion might be discoverable, and at the same time fibrous adhesions only exist in the joint. I think I should be inclined to go one step farther than Dr. Sayre in the classification of false anchylosis, and divide it into two varieties: 1. That in which there is no destruction of the synovial membrane of the joint; and 2. That in which there is.

"I had the good fortune once to make a *post-mortem* examination of a case of this latter variety and see what were the results of force applied. I found the synovial membrane replaced by fibroid tissue. The post-crucial ligament had torn off a scale of the tibia. The ligamentum posticum was folded and puckered. In those cases the peculiar deformity is a displacement backward and a rotation outward of the tibia, giving the limb a characteristic wavy appearance, and in these cases there is no chance for mobility, inasmuch as the articular extremities cannot be kept in position.

"It is wise to recognize the importance of a partial subluxation on the usefulness of the joint. It is well illustrated in cases where the astragalus has passed slightly out of the arch of the articulation, and, unless it is restored, the patient will never have any comfort of his ankle-joint. It is in those cases that a class of practitioners whom we have among us, and known as bone-setters, make so much reputation.

"They grasp the limb and suddenly flex and extend it. In this way the muscles are taken by surprise, and the subluxation is reduced; when it is reduced, the patient finds he can walk without his accustomed pain, and is practically well.

"As regards the operation for bony anchylosis, I agree with Dr. Sayre as regards the exsection of a portion of bone above the insertion of the iliacus. If the bone is exsected, the case practically becomes one differing in no respect from the ordinary operation of exsection. If, on the other hand, a simple section is made, we have what is analogous to compound fracture, and in process of time, as the history of the cases proves, there results consolidation."

In response to a call from the chair, Dr. Buck said: "As regards the operation referred to by Dr. Sayre, it was simply to substitute a straight limb instead of the crooked one, resulting from Rhea Barton's operation. In cases where there is no shortening he would be disposed to allow of the leg becoming fixed in a slightly flexed condition, as it enables the patient to move his leg in walking without slinging it around. It also allows the heel to be brought to the floor when the patient is in a sitting position."

Dr. Post found that in cases of fibrous anchylosis, when the patient was not examined by means of an anæsthetic, that pain was felt in the joint, whereas if the consolidation was bony, no pain was complained of in the joint, though it might be in some other portion of the limb, from the force of the examination, and could be easily discriminated.

Dr. Post narrated an unfortunate case that occurred at the New York City Hospital. The patient was engaged to be married, and had his thigh so adducted as to cover the genitals, and was very anxious for an operation. The operation of exsection was performed, and shortly after the whole limb became gangrenous and the patient died. It was found at the autopsy that the femoral artery and vein were hooked over the end of the femur, and in this way the circulation was cut off.

Drs. Gouley and Crosby being called on, gave their experience.

Dr. Crosby related a rather strange case of a woman nearly sixty years of age, who had anchylosis of the hip-joint, and who fell on it, causing accidental *brisement* force. Dr. Crosby completed the operation, and the patient was doing well. The case was of interest from the age of the patient. He differed from Dr. Buck in respect to the position of an anchylosed leg, preferring the straight position for greater security.

A committee of one was appointed to confer with the College of Pharmacy in respect to the formation of a botanic garden in one of the public parks.

BOSTON SOCIETY OF MEDICAL SCIENCES.

Reports of the Proceedings from March to May, 1874, James J. Putnam, M. D., *Secretary.*

Tuesday, March 31*st.*—Dr. Webber read a paper upon the significance of ulceration of the cornea as a localizing mark in the diagnosis of cerebral diseases (publication reserved). In answer to Dr. Bowditch, Dr. Webber said that the ulcerative process had generally been preceded by an increase in the vascularity of the conjunctiva.

Also, that no special mention was made, in the reports of the cases cited, whether or not the patients were made to take as much nourishing food as possible; but that in a number of the cases ulceration had come on only a short time before death, when the nutrition of the tissues had probably fallen below the normal, a similar condition of things having been also observed with animals.

Dr. Jeffries referred to the cases of herpes zoster facialis, which is now generally believed to be due to an affection of the ganglion of the fifth nerve. In some of these cases ulceration of the cornea occurs, in others not; possibly depending upon whether the whole ganglion is affected, or a certain portion of it left uninjured.

Perhaps the fact that in these cases, as is claimed, iritis rarely occurs if the eruption does not attack the side of the nose, could be similarly explained.

Dr. Webber had seen a case of herpes zoster facialis where at the autopsy the ganglion had been found comparatively healthy except at its upper part, from which the first division of the nerve is given off.

Dr. Fitz suggested the difficulty of distinguishing between the results of simple pressure upon vessels and those due to lesion of nerves. A tumor, for instance, might surround nerves and vessels, and it would seem to be natural that in such cases a destruction of the cornea might rather be due to a direct obstruction of the circulation than to a more indirect alteration of nutrition through lesion of the nerves. He alluded to a case, observed by himself, where phthisis of the bulb had coexisted with a tumor surrounding the nerve in the optic foramen.

Dr. Webber said that he had not seen reports of such cases, although Graefe believed that it was a much more frequent cause of ulceration of the cornea than affection of the fifth nerve.

Dr. Bowditch showed a method of mounting a set of Koenig's rods so that they could be conveniently used for testing the hearing, etc. They are hung on a vertical frame, opposite to which is a square, metallic upright at a distance of a few inches, both fixed into one platform. The upright carries a slider, to which a metallic hammer is fastened, movable in a plane at right angles to that of the rods; and the slider, moving up and down on the upright, is gently detained at intervals by a spring-catch which plays into a series of notches so placed that the hammer, if let fall when the catch is in either of the notches, will strike one or another of the rods. The distance through which the hammer falls is determined by a stop, movable on a graduated circle, to which it is each time drawn back.

Dr. JEFFRIES exhibited an apparatus he had made in accordance with the plan proposed by Dr. Paul Schröter, of Leipsic, the purpose of which is to measure the field of vision in reference to color-perception. It consists of three disks rotating on a single pivot. The first is covered in segments with the usual colored papers used in testing color-blindness. The second, which lies over it, is black, and has a slit from near the centre to the circumference, widening as it goes outward. The third covering is also black, and has a series of square holes increasing in size from the centre outward, and arranged in an eccentric. The disk with the slit can be turned so as to expose any one of the colors of the first, and when the third disk is turned on the second we have presented to the eye squares of color on a black ground, from the centre outward, increasing in size, and with an intervening rest of black. Dr. Jeffries spoke of the use of this apparatus in testing color-perception, and thought it would serve a good purpose in the many experiments now being employed in trying to frame some laws applicable to color-perception and color-blindness.

Dr. GREEN showed three specimens of vegetable parasitic growths, recently removed from the external auditory meatus. Two of them consisted of masses of whitish flakes closely resembling, in their gross appearance, flakes of macerated epidermis; under the microscope they are seen to consist of a parasitic growth in which the stalks of mycelium were closely interwoven, forming a membranous structure, and among these were innumerable minute spores. The fructification could not be determined in these specimens, but the growths seemed to belong to the lower form of parasites known as penicillium.

The third specimen was unusual, in that it showed many of the characteristics of aspergillus, except in its color, which was a bright red. It was taken from a patient suffering from slight chronic eczema of the meatus, whose ear, when seen at one visit, was entirely free from the growth, but, when examined four days after, was partially filled with a large number of bright-red flakes. The parasite had, however, produced no symptoms, and after removal the meatus was free from any irritation which could be referred to the growth. An examination of the masses showed a mycelial growth of large size, with a stalk here and there which ended in a small round head resembling a young sporangium of the aspergillus; in the examination which had been made, however, none of these heads could be found with the spores attached. Great numbers of very large free spores, of a pale-reddish color, were seen in thick clusters, and the collection of these gave the peculiar color to the mass.

The only two varieties of the aspergillus heretofore described from the auditory meatus have been the aspergillus glaucus and aspergillus nigricans, so designated from the color of their spores, and, if this is also of the same family, which the size and general appearance of both mycelium and spores seem to justify us in assuming, we have a third variety, aspergillus rubens.

Dr. Green said that he was inclined not to ascribe so much importance, clinically, to these parasitic growths in the ear as had been done by some writers. In examining a large number of masses removed from the ear—flakes of epidermis, cerumen, dried pus, etc.—he had frequently found parasitic growths of the penicillium forms, and in a few cases well-marked aspergillus, which had produced no inflammation or other symptom. He would divide the cases of aspergillus, clinically, into three varieties: 1. Those in which the parasite appeared in an already diseased ear, and in which it produced no new symptoms or any increase in the previous symptoms; 2. Those in which it appeared in an already diseased ear, but produced a marked increase of an existing inflammation; 3. Those in which the parasite is the direct and sole cause of inflammation, the cases of true myringomikosis of Wreden. Where the parasite existed the indication for treatment was, of course, to get rid of it, for we were as yet unable to say what were the causes of its innocence in some cases, and injuriousness in others. Dr. Green said that he had seen no reason for changing the opinion, expressed some years ago by him, that the repeated and thorough removal of the growth by the syringe and forceps was sufficient to exterminate it.

Dr. White remarked how curious it is that such a variety of parasitic growths occur in the ear, among them the aspergillus, which is known to be protean in its forms; while the number of those occurring in the skin is very limited, and their forms subject to little or no variation.

Tuesday, May 28th.—Referring to the discussion at the last meeting, Dr. Jeffries reported two cases of herpes zoster resembling herpes zoster ophthalmicus, but affecting only a small part of the usual region, thereby perhaps indicating that a portion only of the Gasserian ganglion was the seat of disease.

The first case was that of a young girl, in whom the eruption was limited to the inner half of the left upper eyelid. There were swelling and redness, and history of exposure to cold; and the disease ran its course in four or five days. If, however, the whole forehead had been the seat of a similar eruption, Dr. Jeffries would certainly have called it herpes zoster ophthalmicus. In the second case two entirely distinct groups of vesicles, presenting the usual characteristics of herpes zoster, occupied the right lower eyelid. Dr. Jeffries believed that a distinction could be made between these cases and those of the so-called *cold-sore.*

In reply to Dr. Lincoln, Dr. Jeffries said that he made this distinction on both clinical and anatomical grounds: in herpes zoster, the affection of the skin is less superficial than in cold-sore, runs a longer course, and heals, generally leaving a scar; and is accompanied with neuralgic pain.

Dr. Homans had observed a case in which herpes zoster frontalis had recurred, after an interval of several years, occupying the same seat as previously, but had left no scar in healing.

In response to a question from Dr. Amory, whether the nervous lesion might consist in simple congestion, Dr. Jeffries said that he had generally been able to trace the attack to exposure to cold, but that the exact pathology was not made out.

Dr. Wadsworth reported a case of herpes zoster that he had recently seen, where the distribution of the eruption pointed to an anomaly in the distribution of the fifth nerve. It occurred in a child, four or five years old; and the disease occupied the skin of the forehead, part of the hairy scalp, the upper lid, and the side of the nose. The presence of the eruption on the nose would seem to indicate that the naso-ciliary branch must have been implicated in the disease; but in that case, the cornea and iris should have been affected, which they were not, though the conjunctiva became swollen, and the conclusion seemed justified that in this patient the side of the nose was supplied irregularly by the supra-trochlear nerve.

Dr. Wadsworth said that the anomaly had been observed anatomically, in which the long nasal branch was given off by the trochlearis, but never this particular form.

Dr. Jeffries asked how long the case had been under observation, because he believed that the eye sometimes did not suffer until quite late.

Dr. Wadsworth thought that the length of time was great enough to preclude doubt on that score.

Tuesday, May 26th.—Dr. Wadsworth showed a number of intra-ocular tumors of the choroid and retina, and called attention to the characteristic differences which the different varieties exhibited, as to the manner and rapidity of their growth, and spoke of the diagnostic value of the age of the patient, glioma of the retina never occurring in a person over twelve years of age, sarcoma of the choroid never in one under seven or eight.

Dr. Fitz spoke of the impossibility of distinguishing gliomatous and sarcomatous growths by the microscopic appearances of the cells, saying that there were, frequently, marked differences in size between the cells of any sarcoma; further, that rapidity of growth did not seem to be a necessary peculiarity of glioma, because in the brain they often grow very slowly; at times apparently reaching a large size without giving rise to symptoms.

Dr. Jeffries exhibited, in connection with Dr. Wadsworth's cases, two specimens of intra-ocular tumor—one a white, spindle-celled sarcoma, the other a melano-sarcoma. The latter occupied one-half to two-thirds of the interior of the globe, destroying vision, but not interfering with the action of the iris, and causing no pain or uncomfortable symptoms. It was distinguished by the ophthalmoscope.

Referring to one of Dr. Jeffries's tumors, which he had called a glio-sarcoma, mainly because he had found with the microscope, in one part of it, only small, in others only large cells, Dr. Wadsworth said that he considered this test a very uncertain one, because it is common to find, in sarcomatous, as well as epithelial and other tumors, collections of the so-called granulation-cells, which cannot be distinguished, taken by themselves, from glioma-cells.

Dr. Putnam reported briefly the case of a boy, a patient at the Massachusetts General Hospital, suffering from disease of the aortic valve, who had recently been attacked suddenly with incomplete paralysis of the left side, presumably from embolism, from which he had recovered so as to move his leg freely in bed, though the arm was helpless.

The interesting point in the case was that slight irritation of the skin of the paralyzed hand, such as that made by drawing the point of a pencil lightly across it, caused reflex contractions of the muscles of the opposite hand and arm, causing mainly light flexion of the fingers, hand, and arm at elbow.

In several series of trials these reflex contractions followed the irritations at regular intervals: thus, in the first series, after 12, 11, 17, 16 seconds; in the second, after 4, 6, 4, 12, 12, 14, 30; in the third, after 22, 21, 28, 30. Toward the end of each series of trials, and toward the end of the experiment, the intervals between the irritation and the contractions became longer.

The paralyzed arm and hand did not move except once or twice very slightly, and when it did so the intervals before the movements of the opposite hand occurred were generally longer than usual (v. 2 series, fourth and seventh trials: slight movements of left arm occurred at 4 seconds and 12 seconds, respectively).

It was suggested that the phenomena were due to removal by disease of the inhibitory influence of the right side of the brain over the right side of the spinal cord, although no exact conception could be formed of the conditions which had caused it.

Dr. Bowditch reported some experiments confirming the opinion of those who place the vaso-motor centres in the medulla oblongata, rather than in the various parts of the spinal cord; and showed the blood-pressure curves which he had taken. It was to be seen that, after section of the medulla made at one-third inch above the point of the calamus scriptorius, the blood-pressure immediately fell, but rose again temporarily when the end just below the cut was irritated.

Irritation of a sensitive nerve failed, however, to cause the usual reflex rise of blood-pressure which would have occurred had there been vaso-motor centres in the spinal cord below the cut.

In answer to Dr. Edes, Dr. Bowditch said that the experiments of Owsjannikow, Dittmar, and others, had shown that the vaso-motor centres do not lie above the medulla, in the crura cer.

Bibliographical and Literary Notes.

Art. I.—*Transactions of the Twenty-first Annual Meeting of the Medical Society of the State of North Carolina, held at Charlotte, N. C., May*, 1874. Raleigh, N. C., 1874. Pp. 131.

It is very pleasing to observe, from this goodly pamphlet, that the last annual meeting of the North Carolina Society devoted nearly its whole attention to scientific papers, only nineteen pages being taken up by the report of business proceedings. Ten papers make up the body of the Transactions, several of which are of more than ordinary interest and importance. We congratulate our brethren in North Carolina upon the manifest improvement in the material which was set before them this year, and we do so all the more gladly, since we felt called upon the previous year to notice their Transactions somewhat unfavorably.

We are glad to see that the retiring President, Dr. W. A. B. Norcom, of Edenton, in giving his Annual Address, read a paper on a purely practical topic, instead of following the custom so much in vogue of eulogizing the profession at large, or of lecturing his hearers upon some threadbare matters of ethics. Dr. Norcom's paper is on the subject of "Hæmorrhagic Malarial Fever," by which term he means that variety of malarial disease which has been spoken of under the names of cachæmia, yellow remittent, icterode, pernicious, malignant, congestive, or up-country yellow fever, new disease, black jaundice, malarial hæmaturia, etc.

Dr. Norcom brings forward evidence to show that, contrary to Dr. Michel's impression, the disease is not wholly confined to the southern portions of the United States. He defines it as "a malignant malarial fever, the result of frequent attacks of intermittent, or of a prolonged and exhausting remittent, characterized by hæmaturia, hæmatemesis, epistaxis, enterorrhagia, metrorrhagia, or hæmorrhage from the gums and fauces, or from two or three of these at the same time; most distressing and incessant nausea and vomiting, and complete jaundiced condition (greenish-yellow hue) of body. The cold stage, though not always, is generally well marked, and the paroxysms oftenest recur about every ten or twelve hours, but far more frequently the fever is uninterrupted by intermission or remission."

The *post-mortem* appearances differ only in degree from those of other forms of malarial fever. There is often, but not always, great emaciation. The nervous system shows no marked lesions, as a rule. The heart appears healthy, but may contain clots formed before death. The gastro-intestinal mucous membrane shows softening, ecchymoses, discoloration by bile, with irregular injection, and dark, turgid vessels. The liver is of a slaty or bronze hue, and somewhat increased in weight. In a case of Michel's it was of a dark-chocolate color. The spleen is much enlarged, of a firm consistence, or softened, and filled with disorganized colored corpuscles. The gall-bladder is distended with thick, greenish-black bile. The kidneys are highly congested, and increased in size and weight. Hæmorrhage from them is attended with desquamation of the excretory cells and the uriniferous tubes.

Dr. Norcom thinks that in the mild cases of hæmaturia the *débris* of blood are removed by the depurative action of the kidneys, but that in the worst cases there is true renal hæmorrhage from ruptured capillaries.

There is usually a well-pronounced initial chill, but sometimes none occurs, and in malarial hæmaturia there may be only slight shivering sensations just before the passage of bloody urine, with intense pain over the region of the kidneys. At the same time, or a little later, there are distressing nausea and vomiting of food at first, and afterward of thick, ropy bile—yellow, dark brown, or green, and, in extreme cases, black vomit. There is sometimes profuse vomiting of blood, proving rapidly fatal in general. The nausea is very persistent, and there is great restlessness, with jactitation and sleeplessness. Jaundice comes on after a few hours. Fever closely follows the chill, but is moderate, except after exhausting hæmorrhage. There is great craving for cold drinks. The face is anxious, and the eyes sunken. Headache is not prominent. Hiccough is rare, but very troublesome. The hæmorrhage, from whatever emunctory it may proceed, occurs in from one to three hours after the chill, and may usher in the attack. It takes place oftenest from the kidneys, next from the nose, and very rarely from the gums, fauces, and womb.

Albuminuria is common, and the disease often proves fatal by uræmia. The urine shows various degrees of coloration by the elements of blood. It is acid, and from 1,010 to 1,020 in specific gravity. The quantity is normal or much increased, rarely diminished.

In extreme cases, vibices and purpuric spots appear on the surface. Blindness occurred in one case, coming on very suddenly, and thought to be due to the rupture of small retinal vessels. The sight was never wholly recovered. Sighing respiration, a prominent symptom, indicates great prostration. No case of enterorrhagia was satisfactorily made out; discharges *per rectum* of altered blood from the upper portion of the gastro-intestinal canal occurred. Fever is generally continuous, according to Dr. Norcom's observations, and the bloody discharge occurs at varying intervals.

Death may occur from uræmia, heart-clot, or perhaps from cholesteræmia, or from exhaustion. Recovery is presaged by subsidence of the hæmorrhage and other symptoms.

Malaria is the exclusive cause of the disease. It seems to have displaced the old algid pernicious fever. About fifty cases have occurred in Dr. Norcom's county since 1866, the population being about seven thousand. Dr. Norcom ascribes them to the deficient attention which has been paid to drainage for several years.

The mortality of the disease ranges from twenty-five to fifty per cent. Dr. Norcom attributes this excessive mortality to the antiphlogistic treatment, or to the temporizing plan of "preparing" the system for the use of quinine. He himself has treated eleven cases, with only one death. In the fatal case, the patient was moribund at the time of his first visit. The duration of the disease is from four to twelve days.

The disease is to be prevented by precautions against malaria, in regard to which Dr. Norcom gives very good advice. After demonstrating the absurdity of the antiphlogistic and preparatory methods of treatment, Dr. Norcom states that his own plan is, to try to bring on reaction, if called during the chill, by the use of warm applications, hot drinks, etc.; to calm the stomach by the hypodermic use of morphia, and to begin immediately with large doses of quinine—ten grains every hour until from forty to sixty grains have been taken, continuing to give every day, for three or four days, from forty to sixty grains. Stimulants are given in moderation, with beef-tea in quantity as great as can be digested. The important point, however, is to keep the patient under the influence of both quinine and morphine. Purgation during the stress of the disease is condemned, but a mild purgative may be given as convalescence begins. As to the amount of stimulation, one ounce of brandy or whiskey every two hours is generally enough, except in old topers. Iced champagne or claret, ice or ice-water in small quantities and at not too short intervals, may be allowed.

Dr. Norcom has had no experience of the effects of the so-called hæmostatics, but would be inclined to use ergot hypodermically in future cases. In uræmic cases, rubefacients or dry cups may be applied over the kidneys and stomach, but blisters are inadmissible, as the blistered surface would probably prove another source of hæmorrhage. Tonics are needed for a month or more after the beginning of convalescence, with generous living, and removal to a wholesome climate.

Dr. Norcom very properly and effectually combats the prevalent notion that uræmia contraindicates the use of opium, the truth being that this drug really enables the nervous system to tolerate that condition to a very great extent. In every particular, indeed, his plan of treating the disease seems well worthy of confidence.

Following Dr. Norcom's paper, we come to the Annual Address of the orator, Dr. A. B. Pierce, and to the following papers: "Case of Ovarian Tumor with Ascites," by Dr. W. J. H. Bellamy; "Puerperal Eclampsia, Venesection, etc., etc.," by Dr. R. L. Payne, who thinks he has found bloodletting of essential service in the treatment of puerperal convulsions (but why the "etc., etc."?); "Report of Cases," by Dr. J. McDonald (Intra-Uterine Fibroid Tumor, Gunshot-Wound of Abdomen with Peritonitis, Incised Wound of Small Intestines, Vesico-Utero-Vaginal Fistula, and Traumatic Tetanus); "Report of Cases," by Dr. Charles Duffy, Jr. (Osteo-Myelitis of Superior Maxillary Bone, Good Results from the use of Tampons of Carbolized Cotton-Wool in Vesico-Vaginal Fistula, Urinary Infiltration, Beneficial Influence of Quinia, and Latent Pleurisy, Aspiration, Recovery); "A Case of Arsenic-Poisoning with Obscure Symptoms, simulating Cerebro-Spinal Meningitis," by Dr. Thomas F. Wood; "Death by Asphyxia of Five Seamen on board of a Vessel, from the Inhalation of Carbonic-Oxide Gas," by Dr. W. W. Lane; "Cases Reported," by Dr. P. E. Hines (Case of Hip-Joint Disease treated with Prof. Sayre's Splint—Recovery, Enlargement and Inflammation of the Knee-Joint in a Child—treated by Extension and Counter-extension—Recovery, Case of Excessive Exhausting Vomiting in the Early Period of Pregnancy, in which Life was saved by Inunctions of Lard, and Cases of Fractures treated by Plaster-of-Paris Splints); "Operation on Fistula-in-Ano with the Elastic Ligature," by Dr. E. B. Haywood; "A Case of Stone in Bladder, commencing at Seven Months old (*sic*)," by Dr. W. R. Sharpe; and "Two Cases of Apparent Death," by Dr. T. S. Duffy.

Art. II.—*Physiology for Practical Use.* Edited by James Hinton. With an Introduction by E. L. Youmans. 12mo, pp. 507. New York: D. Appleton & Co., 1874.

The contents of this volume seem to have been furnished by Mr. Hinton, an aural surgeon of London, and other professional gentlemen, as a series of contributions on health to the *People's Magazine.* The author, Mr. Hinton, has rearranged these papers and revised them so that the instruction is brought down to the present state of advancement. The chapter on "Alcohol" is entirely new, and the author has availed himself of an article contributed by Prof. Ferrier to the *Journal for Anatomy and Physiology*, giving an abstract of the professor's experiments upon the functions of the brain. This is placed in the "Appendix."

The work is one which conveys succinctly the leading physiological truths as they are at present understood, described in a manner easily comprehended by the popular reader, and embracing a great deal of valuable hygienic instruction.

Art. III.—*The Physiology of Man, designed to represent the Existing State of Physiological Science, as applied to the Functions of the Human Body.* By Austin Flint, Jr., M. D., Professor of Physiology and Physiological Anatomy in the Bellevue Hospital Medical College, etc., etc. In Five Volumes. Vol. V. (With a General Index to the five volumes.) Special Senses; Generation.

Notice of the second part of fifth volume, treating of Generation.

The article on generation brings Dr. Flint's exhaustive treatise to a close. It occupies nearly the half of the present volume (Chapters XI. to XIX. inclusive).

In Chapter XI., spontaneous and sexual generation are briefly considered, and then an excellent description is added of the female sexual organs. Dr. Flint evidently believes that there are proper fields for the exercise of imagination in physiology, for we find him denying, in spite of Pouchet and

Bastian, the possibility of spontaneous generation, insisting that *analogy* should be our guide in determining the origin of the infusoria, whose exact mode of production is not understood. In the study of the anatomical structure of the female organs, all the most recent investigations may be found. Waldeyer's views, for the most part, meet with unrestricted acceptance. Rouget, Wernich, Luschka, Frankenhäuser, Waldeyer, and others, have done much in the past decade to put a new face upon an old subject, and it is pleasant to note them in the volume before us, occupying their proper posts of honor. Gynæcologists would probably find a vagina measuring six inches upon the posterior wall (*vide* page 287) of rather extravagant dimensions.

Chapter XII. treats of the ovum and ovulation. The existence of the micropile having been demonstrated in some of the mollusks and fishes, Dr. Flint is prepared to accept its existence in the ova of mammals, though the transparency of the homogeneous membrane surrounding the ovum has heretofore baffled all attempts at its demonstration. In the anatomy of the ovum, the description of Waldeyer has been followed. As regards the connection between ovulation and menstruation, the doctrines taught by Coste appear to have undergone no material alteration. Some new matter is given in connection with the description of the passage of the ovum into the Fallopian tube. The doctrine of the erectility of the Fallopian tube is abandoned for want of an anatomical basis. Considerable stress is laid upon the serous current, produced by the ciliæ of the fimbriated extremity of the tube, as determining the direction of the ovum after its discharge from the ovary. This chapter contains an interesting note from Prof. Thomas concerning the effect of double ovariotomy upon menstruation. In five such cases the menstrual function was completely suspended. Dr. Beigel has endeavored to show lately that there is no necessary connection between ovulation and menstruation, and instances the continuance of a periodical flow in many cases after double ovariotomy as proof. Such cases appear, however, to be rare. That menstruation is due to a preceding fatty degeneration of the blood-vessels of the mucous membrane is adopted upon the recent authority of Kundrat and Engelmann. The subject of the corpus luteum has received no new important light since the exhaustive treatises of Coste and Dalton.

Chapter XIII. is devoted to the male organs and elements of generation. The anatomical description of the male organs is a model in its way. Under the head of the prostate, we find the interesting statement of Kraus, that "the spermatozoa, in the absence of the prostatic fluid, cannot live in the mucous membrane of the uterus of mammalia; but with its aid they may live for a long time in the uterine mucus, often more than thirty-six hours."

Chapter XIV. treats of fecundation, a subject always of great interest, and of vast practical importance on account of its bearing upon the treatment of sterility. To the gynæcologist this chapter is earnestly recommended. The much disputed question, as to the possibility of super-fecundation, is answered by our author in the affirmative. Dr. Barker's case, quoted in the foot-note, furnishes certainly very strong evidence of the possibility of the phenomenon.

Chapter XV. describes the segmentation of the vitellus and the formation of the membranes and placenta. M. Robin's investigations, concerning the changes the ovum undergoes previous to the formation of the primitive trace, are given in full. Observations are quoted from Dursy, which seem to show that the idea of the development of the neural canal from the blastodermic trace is erroneous, the reality being that the neural groove is a secondary formation, which appears in front of the groove, but not in continuance with it. The formation of the membranes is described with beautiful clearness. Robin's view as to development of a new mucous membrane, beneath the decidua vera, toward the fourth month of gestation, is presented; but no mention is made of the investigations of Friedländer, and in the main confirmed by Kundrat and Engelmann, which seem to show that this new mucous membrane is more exactly the adherent portion of the old membrane, from which the decidua vera has become separated by an exfoliative process. The short glands, regarded by Robin as of new formation, appear to be in reality the fundal extremities of the old gland. Kundrat and Engelmann go so far as to question whether, when, as a consequence of difficult labor, for instance, a complete removal of the mucous membrane has taken place at any point, glandular structures are ever formed again.

A vast deal has been written of late upon the structure of the placenta, but it would seem not to much purpose, for Dr. Flint, who is a very keen judge as to the value of physiological evidence, and who has conscientiously weighed the points discussed, finds that the familiar description of Dalton requires no alteration of any material moment.

Chapters XVI., XVII., and XVIII., are devoted to the development of the embryon. The descriptive part is, of course, excellent, but a few more diagrams would have made the study easier to those who are not in advance familiar with the subject. We are disposed to regret this omission the more, as all who are acquainted with Dr. Flint as a teacher are aware of his peculiar readiness in devising objective methods of presenting difficult subjects.

In Chapter XVIII. we miss Waldeyer's account of the early development of the Wolffian bodies, and their subsequent relations to the ovaries and testicles. An admirable original diagram, which makes us long for more, furnishes a clear idea of the fœtal circulation. Respiratory efforts *in utero* are attributed entirely to compression of the umbilical vessels. It is, however, likewise probable that undue pressure upon the fœtal skull with forceps, for instance, will excite respiratory movements, even when the placental circulation is undisturbed.

Chapter XIX. is devoted to fœtal life, development after birth, and death. Dr. J. E. Taylor's remarkable observations concerning the non-shortening of the cervix are recognized, and admitted for the first time into a standard work as accepted physiological facts.

Kundrat and Engelmann, having found that a fatty degeneration of the uterine mucous membrane takes place previous to menstruation, argue that the ovum which is fecundated probably belongs to the next menstrual period, i. e., the period which has been prevented by the occurrence of conception. Dr. Flint objects that, were this view accepted, "it would be necessary to assume that ovulation usually takes place before the flow, and that fecundation would be most liable to occur at that time." Löwenhardt, who adopts the same view as Kundrat and Engelmann, shows, however, that a period of natural sterility, varying according to individual peculiarity from two to eight days, exists in women just before menstruation, i. e., during the prodromal period of congestion. The following facts are affirmed as showing that the time of fecundation assumed by Kundrat and Engelmann, i. e., before menstruation, is not uncommon: 1. A case of impregnation which occurred eight days after labor. Certainly here there could have been no question of antecedent ovulation. 2. Three cases in which Löwenhardt, by the passage of the sound twice a week into the uterus of a married woman, prevented conception from taking place up to a few days of an expected menstrual period. Yet, when the time of the period arrived the women were found to be pregnant. 3. It is ordinarily assumed that the ovum perishes, at the farthest, by the twelfth day following the first menstruation; but we find Jewish women, who are forbidden to admit of copulation until the eighth day after cessation, are unusually fertile. Again, out of two hundred and four cases of pregnancy furnished by different authors, in which the date of the fruitful coitus could be determined, it occurred in sixty-five after the twelfth day.

That fruitful intercourse is most likely to occur soon after menstruation is possibly due to the patulous condition of the os at that time. Moreover, the existence of sexual excitability, which is then most marked in the female, unquestionably favors the passage of the semen into the uterus. It has been asserted that the spermatozoa may lie in the uterus and Fallopian tubes for fourteen days, and perhaps longer. This, if true, would cover a multitude of contingencies, and it is to be remembered that coitus is fruitful in the exception, not the rule.

Dr. Flint receives our earnest congratulations on having, after eleven years of industrious labor, brought his work to a conclusion. It is a magnificent monument, of which the entire profession in this country have a right to be proud. "Flint's Physiology" now stands without a rival in any language.

There is a steep-mountain-road in Scotland, near the top of which the traveler finds a stone seat, upon which are engraved the words, "Rest, and be thankful." We trust that inscription may not become Dr. Flint's motto. Each successive volume has shown such a nearer approach to perfection, that we are led to believe even better work is in store for us yet. In conclusion, we have only to say that publishers as well as author deserve the thanks and gratitude of the medical public for having so handsomely sustained this enterprise to the conclusion.

ART. IV.—*The Toner Lectures. Lecture III. On Strains and Over-action of the Heart.* By J. M. DA COSTA, M. D., etc. 8vo, pp. 28. Washington: Smithsonian Institution, 1874.

THIS is a very interesting pamphlet, in which the author takes the ground that great bodily exertion or fright may cause organic disease of the heart, and that functional disturbances of that organ, in any way induced, may give rise to organic diseases. The author cites very many cases of rupture of the valves occurring apparently from fright, and from severe exertion.

The author's views of "irritable heart" are perhaps already well known.[1] He says, on page 11, that he thinks the disease originates usually in the nervous apparatus supplying the heart, and is caused frequently by overwork, excesses in the use of tea, coffee, tobacco, and in venery, together with mental worry, which terminate in perverted innervation and altered nutrition. The feelings figuratively expressed by "heart-weary" and "heart-sick" are not a "figure of speech, but in truth may be the beginning of actual cardiac malady." He says that the functional disorder may produce organic change in the organ "gradually through perverted nerve-action; but partly, also, by directly causing inflammatory and other tissue changes."

The researches of Dr. Da Costa are very interesting and valuable, but the question of the importance of functional heart-disease in the causation of organic affections must be still open for extended investigation. We incline to the belief that the proportion of cases of organic disease originating thus, excluding perhaps cases involving a moderate hypertrophy, is not very large, but if they occur in any proportion they are worthy of study and prevention.

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[1] *Vide American Journal of the Medical Sciences*, for January, 1871.

ART. V.—*Medical Problems of the Day. The Annual Discourse before the Massachusetts Medical Society, June 3, 1874.* By NATHAN ALLEN, M. D., LL. D. 8vo, pp. 92. Boston: A. Williams & Co., 1874.

THIS address is very practical in character, and almost wholly devoted to the subject of hygiene. Dr. Allen thinks the education of the masses in the true principles of science as relates to the prevention of disease is the only means by which empiricism can be avoided.

Although the essay contains but little that is especially new to the profession, we should be glad to have it receive a wide circulation, not only in the profession, but also among the laity.

ART. VI.—*Divulsion in Stricture of the Urethra.* By SAMUEL LOGAN, M. D., etc. 8vo, pp. 20. From the *New Orleans Medical and Surgical Journal*, 1874.

THE author insists that all organic strictures are incurable; that the indication for treatment is dilatation; that all other treatment must point to the more effectual practice of dilatation; that the only treatment other than dilatation which should be resorted to is divulsion, except in strictures located in the meatus. In answer to the question, in what cases we should resort to this operation, the author says that in cases in which gradual dilatation fails, and in those tight, hard strictures in which dilatation would be likely to be useless, Holt's instrument is preferred to any other.

ART. VII.—*Problems and Future of Pharmacy in Germany.* By FREDERICK HOFFMAN, Ph. D. 8vo, pp. 12.

THE author is of opinion that the profession of pharmacy is destined to become much limited in point of importance, or to become entirely extinct, in Germany; not so much from want of a high standard of qualifications in its members, however, as in consequence of the innovations of the progress of modern medicine, and the wide-spread sanitary knowledge among the people. He prophesies a similar result in this country in time.

ART. VIII.—*An Enquiry into the Value of the Signs and Symptoms regarded as diagnostic of Congenital Syphilis in the Infant.* By THOMAS BALLARD, M. D., etc. 8vo, pp. 23. London: J. & A. Churchill, 1874.

THIS little volume comprises an argument against the inheritability of syphilis, supported by the report of eighteen cases.

We are at some loss to account for the fact, if the author's belief is true, that the so-called syphilitic signs and symptoms usually occur in children whose parents (one or both) have been affected with syphilis. The eruptions in these cases are attributed to uncleanliness.

ART. IX.—*Essentials of the Principles and Practice of Medicine. A Hand-Book for Students and Practitioners.* By HENRY HARTSHORNE, A. M., M. D., Professor of Hygiene in the University of Pennsylvania, etc. Fourth edition, thoroughly revised, with one hundred Illustrations. Philadelphia: Henry C. Lea, 1874.

WE have already had occasion to notice the previous editions of this work. It is excellent of its kind. The author has given the book a very careful revision, in view of the rapid progress of medical science.

Art. X.—*The Physician's Visiting List*, 1875. *Twenty-fourth Year of its Publication.* Philadelphia: Lindsay & Blakiston.

This is one of the lightest and most convenient pocket-books of the kind, and the experience of a large number of physicians is in its favor. It is adapted to a practice averaging twenty-five patients per week. Those living at a distance will do wisely to order their new list in good season.

Books and Pamphlets Received.—Transactions of the Pathological Society of Philadelphia, vol. iv. Containing the Report of the Proceedings for the Years 1871, '72, and '73. Edited by James Tyson, M. D., Hospital Lecturer on Pathological Anatomy and Histology in the University of Pennsylvania, etc. Philadelphia: J. B. Lippincott & Co., 1874. Pp. 250.

The Breath, and the Diseases which give it a Fetid Odor. With Directions for Treatment. By Joseph W. Howe, M. D., Clinical Professor of Surgery in the University of New York, Visiting Surgeon to the Charity Hospital, etc. New York: D. Appleton & Co., 1874.

Croup, in its Relations to Tracheotomy. By J. Collis Cohen, M. D., Lecturer on Laryngoscopy and Diseases of the Throat and Chest in Jefferson Medical College. Philadelphia: Lindsay & Blakiston, 1874.

An Investigation into the Action of Veratrum Viride upon the Circulation. By H. C. Wood, Jr., M. D., assisted by Joseph Berens, M. D. Reprinted from the *Philadelphia Medical Times*. Pp. 51.

Transactions of the Medical Society of the State of Pennsylvania, at its Twenty-fifth Annual Session, held at Easton, Pa., May, 1874. Vol. X., Part I. Published by the Society. Pp. 454.

Examination of the Urine. By George B. Fowler, M. D., Examiner in Physiology, College of Physicians and Surgeons, New York, etc. New York: D. Appleton & Co., 1874. Pp. 80.

Abscesses originating in the Right Iliac Fossa. By Gurdon Buck, M. D. Reprinted from the "Transactions of the New York Academy of Medicine" for September, 1874.

Erysipelas: Its Treatment with Sulphate of Quinine. By Y. R. Le Monnier, M. D. Reprinted from the *New Orleans Medical and Surgical Journal.*

The Address on Obstetrics, delivered before the Medical Society of the State of Pennsylvania, May, 1874. By William B. Atkinson, M. D., etc.

Charter and Constitution of the Gynæcological Hospital and Infirmary for Diseases of Children. Philadelphia, 1874.

Erysipelas and Childbed Fever. By Thomas C. Minor, M. D. Cincinnati: Robert Clarke & Co., 1874. Pp. 131.

Transactions of the Medical Society of the State of Alabama. Twenty-seventh Session, 1874. Pp. 428.

Reports on the Progress of Medicine.

SURGERY.

PREPARED BY SAMUEL B. WARD, M. D.

Double Cancer of the Breast in a Male.—The *Medical Times and Gazette*, of August 1st, contains the history of an extremely rare case of the above, occurring under the care of Mr. Wagstaffe, at St. Thomas's Hospital. The patient was sixty-one years of age, well developed and well nourished, and a blacksmith by trade.

In the left breast the disease had begun eighteen months previous; grew without pain during eleven months; during the last month only, had caused shooting pains and interfered with the use of the left arm. The skin covering the tumor was red, thin, and adherent. Below and to the outer side of the nipple the growth projected as a smooth, hard, semi-elastic, oval mass, about two inches in transverse diameter, somewhat nodulated toward the nipple, which was retracted.

In the right breast the lump had been noticed for three months; could not be seen, but could be felt, as a small nodule, under the nipple. No abrasion of the surface on either side, nor any discharge from the nipples; no distinct enlargement of the axillary glands, but there was some doubt about those on the left side.

Both breasts were removed at the same sitting, by semilunar incisions; the wounds healed rapidly; and at the end of two months there was no return of the disease. Careful examination of the tumors showed them to be typical scirrhus.

In the remarks appended to the case occur the following points of interest: It is surprising, if cancer by preference attacks organs undeveloped and retrograde, that it appears so rarely in the male breast; that, in this case both breasts should have been affected, with no evidence of universal dissemination, or constitutional disease, not even lymphatic glands being involved. There was no family history of cancer, and the disease could not be attributed to any local cause.

Venesection Forty Years ago.—At a meeting of the British Medical Association, held in August last, Sir James Paget delivered the opening address before the section of Surgery. Sir James began his professional studies in Norwich, where the meeting was held, and histopic was the practice of surgery as he saw it during the first four years of his apprenticeship, from 1830 to 1834. Some of his opinions will scarcely coincide with what has been taught in the schools within the last twenty years.

The speaker did not undertake to make a statement, in figures, concerning venesection, but said: "On market-days patients came (to be bled), and I really scarcely know for what reason, except that it was a good old custom, and the county was conservative. They had some discomfort, and wished to be bled, and I bled them until they fainted, and the charge for bleeding was one shilling. I kept my cases with much care, and I have a clearer recollection of that period of my professional life than I have of an equal period of any part of it which has since passed, and I verily believe that not one person suffered harm. Among these was a large number of pregnant women; and, in these cases too, no harm came. . . . These cases prove to my mind as clearly as any thing of the kind can be proved, that the loss of blood up to fainting, and, in some cases I remember, with those epileptiform convulsions that come with loss of blood, is absolutely harmless. I will venture to say that there are few persons in this room who might not be bled to fainting, and to-morrow be almost unconscious of it, and perhaps, in this week of hospitalities, might even be the better."

Such being Sir James's opinion as to the seriousness of even a considerable loss of blood in comparatively healthy individuals, he next passed to the consideration of such as were the subjects of acute disease: "As soon as the hot skin, and a rapid pulse, and a flushed countenance, were found, with local pain, or any other acute symptoms—as delirium, for example—at once bleeding was resorted to. I will not venture to say how much of real good was done in these cases; but this I will say, that I believe there is at present no remedy employed, from which the immediate relief derived is so great or so complete as it was from bleeding. . . . Persons who are bloodless—suffering from profound anæmia—faint and pale, who yet complained of the continuance of the local symptom, were again and again bled, and again and again experienced temporary relief. . . . It would be impossible from these records, or from others much better than mine of the same time, to determine now, by any method of analysis, what cases gained real, and what gained only passing or apparent relief; but I cannot for a moment believe that there were none among these cases that were thoroughly and fully relieved by the proceeding; and one of the chief inquiries which we have to enter upon even now is, which of the cases suffered harm, and which were really benefited, by the treatment which we now neglect."—*Medical Times and Gazette*, August, 1874.

Translations.

Fatty Degeneration of the Heart.—Dr. Ponfick (*Berlin kl. Wochenschrift*, 1873, 1 and 2) classifies this degeneration into two principal forms, according as it occurs as a sequence of an already abnormal, hypertrophic, or atrophic muscular tissue, or as it affects a normal muscular cardiac tissue. In the cases belonging to the first class, the degeneration remains confined to several sections; in those of the second class, the whole heart, though with varying intensity, is affected. In regard to etiology, the first form might be defined as that which is dependent on some anomaly causing disturbances in the circulation, while in the second form this motive is absent. Localized fatty degeneration is, therefore, a constant attendant on the forms of organic cardiac disease which are followed by hypertrophy. To this category also belong the pulmonary complaints which reflect on the heart, as, emphysema, phthisis, deformities of the thorax and spinal column, especially kyphosis—which produce disturbances in the right heart; diseases of the aortic system, stenoses, sclerosis, aneurism, nephritis, deformities of the spine, etc.—which have influence on the left heart. In regard to the second principal form of cardiac fatty degeneration, that which occurs in the course of acute infectious diseases is first to be considered. Though this variety may often undergo regressive metamorphosis, a genuine fatty heart may develop in consequence of protracted convalescence, or from the accession of complications. From the large number of acute diseases which cause this diffuse (albumino-fatty, cloudy) change of muscular fibre, the abdominal typhus, recurrent, pyæmic and puerperal fevers deserve prominence above all others. The cardiac tissue undergoes fatty degeneration in a much more acute manner under the influence of certain toxic agents, among which are phosphorus, arsenic, and sulphuric acid. There yet remains the chronic variety of the true or idiopathic fatty heart. This is characterized by the high degree of general change and the greater implication of isolated portions, the favorite seat of which are the papillary muscles. The author also believes that the idiopathic fatty heart may be classified into two varieties, in illustration of which he publishes clinical histories and *post-mortem* examinations. The means for the differentiation of both varieties is, first, the age of the patient—in the cases of the first variety affecting very old individuals, while, in those of the second variety, the middle age, from twenty to forty years, furnishes the chief contingent—and, secondly, the quantity of blood. The author, therefore, designates the first variety senile or plethoric, and the second the anæmic form of fatty heart. The former is associated with manifold senile changes, among which may be mentioned pulmonary emphysema, granular atrophy of the kidneys, induration of the liver and spleen, calcification and ossification of the cartilages, deforming inflammation of the joints, and chronic inflammatory conditions of the brain and its membranes. In addition we find, besides the fatty degeneration, the deposition of brown pigment granules, which is not found in the anæmic variety. Furthermore, in the senile variety we find the whole vascular system more or less diseased, sclerosed, calcified, and atheromatously degenerated. As a consequence, we find embolic processes. On the other hand, in the anæmic form, we find the vessels narrow, otherwise entirely normal, perhaps moderate fatty degeneration of the internal and middle coats; the above-named consequences are therefore absent. All the organs, also, are found but moderately, if at all, diseased, perhaps pulmonary œdema, serous transudations into the pleuræ, slight degrees of hydrocephalus; but the secreting cells of the liver, the tube-like gastric glands, and the epithelium of the cortical renal substance, show a high degree of fatty degeneration; catarrhal icterus, also, is not unusual. The anatomical substratum, however, of these conditions is the fatty degeneration of the heart and the condition of the blood. This, in almost all cases is fluid, contains but few loose coagula and often no white clots, and has an appearance like water in which meat has been macerated. If such blood is allowed to settle in a glass cylinder, a separation of its constituents takes place, as when substances which prevent coagulation are added to normal blood. The superior, most voluminous layer consists of plasma; the second, lesser, of white blood-corpuscles; the third, broader, of the precipitate of red blood-corpuscles. These phenomena, very similar to those of leucæmia, are, however, only dependent on an extraordinary diminution of the red blood-corpuscles. This condition of oligocythæmia and hyperinosis gives us an additional means for differentiation from the first variety, in which, without exception, all the organs are full of blood, the fibrine is present in large quantities, and the proportion of red and white blood-corpuscles is of the normal average. As a further means for differentiation we have the dropsical symptoms, which occur in the plethoric variety only under special conditions, but are almost invariably present in the anæmic variety. In the senile variety, the genesis of the degeneration is found in sclerosis of the aortic system; when this is associated with embolism of the heart, we find circumscribed deposits, sometimes hæmorrhagic in character, at others showing elevations of the cardiac tissue. In the anæmic form we can often trace the predisposing causes: protracted puerperal state, typhoid fever, colliquative diarrhœa, loss of blood, etc.; these often lay the foundation of an anæmic and hydræmic condition. Dr. Perl has instituted experiments in animals, which prove that cardiac fatty degeneration can be established by the withdrawal of the fluids of the body.—*Vierteljahrschr. f. prakt. Heilk.*, iv., 1873. E. F.

Inflammation of the Thoracic Duct.—M. Chouppe, in his inaugural thesis, has carefully studied this affection, the symptomatology of which is as yet unknown. The author has had occasion to observe this inflammation in a young female, who died in the service of Prof. Vulpian, and, searching the literature of the subject, has been able to collect only five cases. In four of these, occurring in the practice of Velpeau, Gendrin, Andral, and Wm. Adams, there was no question regarding the secondary nature of the inflammation; in the fifth, on the contrary, published by M. Worms, the inflammation, as in the patient of M. Vulpian, was primary. For the purpose of specially studying this primary inflammation, M. Chouppe has instituted a series of experiments in animals. It is natural to suppose that the thoracic duct, becoming inflamed, discharges a large quantity of pus into the subclavicular vein; the observations of MM. Worms and Chouppe, however, do not show that the quantity of pus introduced into the blood has been considerable; in the patient of M. Worms, there was no alteration of form in the red blood-globules; the white globules were very abundant; the blood of M. Chouppe's patient was not examined. Nevertheless, the grave symptoms in both cases seem to speak for the presence of pus in the circulation. According to the author, the patient might be said to have suffered from pyæmia of internal origin; in the diagnosis, typhoid fever, meningitis, and articular rheumatism, were thought of, but purulent injection never entered into the differentiation. A further noteworthy point is the obliteration of the subclavicular vein in the case of M. Worms, and in one experiment of M. Chouppe. This obliteration offers an obstacle to the entrance of pus into the circulation; but the author believes that the action is a very slow one, as all the symptoms are those met with in pyæmia. Though the fact of obliteration was positive, there were no symptoms indicative of cessation of the lymphatic circulation. There were no disorders of digestion or nutrition, nor was there much œdema. Pulmonary infarctions were also found, and, according to the author, these had caused the embolisms. This patient also presented erythema, and inflammation in several tendinous sheaths and articulations, symptoms which remain unexplained. In the cases of primary inflammation the onset was well marked; in M. Worms's case, it began with a violent pain in the abdomen, and high fever; the patient of M. Vulpian had a severe prolonged chill. In both cases, violent fever, excessive prostration, and emaciation, soon supervened. This is a *résumé* of the principal points of the thesis; the author reserves his conclusions, and has acted wisely in not anticipating the results of future observations, nor essaying to fix the symptoms of this inflammation. In conclusion, the author says: "Primary inflammation of the thoracic is a positive fact; this inflammation, which progresses very rapidly, is attended by the abundant production of pus, more or less of which enters the general circulation through the subclavicular vein. The onset is often characterized by high fever and great prostration of vital forces. These general symptoms have been accompanied, in two cases at least, by local manifestations characterized by great variations; no connection can be established between these symptoms and the primary affection. In a diagnostic point of view, no real importance can be attached to any one of the symptoms, and it is solely by their divergence that they can become useful. In conclusion, I believe it is impossible, at the present day, I will not say, to diagnosticate, but even to suspect a primary inflammation of the thoracic duct; the possibility of its occurrence may often be thought of, and autopsies made to ascertain its existence may prove it to be a less rare disease than has hitherto been supposed."—*Gazette Méd. de Paris*, 1873. E. F.

Transfusion with Blood of Different Species of Animals.—Prof. Leonard Landois (*Centralblatt f. d. med. Wisscht.*, 57, 1873), after numerous experiments on animals, has established two facts: 1. The blood-serum of many mammals dissolves the blood-corpuscles of others. Among the animals which have been examined, the serum of the dog seems to be the most intense in its action, while that of the rabbit possesses this power in a very slight degree. 2. The blood-corpuscles of mammals possess a variable resistibility in the serum of other animals. For instance, the blood-corpuscles of the rabbit are very easily dissolved, whereas those of the cat and dog are much less soluble. This process of solution can be followed under the microscope, and takes place more rapidly at the normal temperature of the blood. In view of these facts the author thus sums up the results of the attempts at transfusion: 1. The blood-corpuscles of one species of mammals are dissolved in the blood of another species, as has already been stated by previous investigators. It is indifferent whether defibrinated or non-defibrinated blood be used. 2. The time necessary for the solution varies; thus, rabbit's blood degenerates in a few minutes in the dog. The solution is recognized and determined by the serum-test; tests with sulphates of soda may serve for comparison. If the transfused blood-corpuscles are easily distinguishable by their size from those of the recipient, the microscope also furnishes evidence as to the time of the solution. 3. The dissolved component parts of the blood-cells are excreted especially through the urine, less abundant and not so constant in the intestine, uterus, bronchi, and serous cavities. A certain quantity of the dissolved material may be used for development in the body of the recipient. Hence, when small quantities of blood are transfused, especially when this dissolves slowly, bloody exudations may be absent. 4. Transfusion with blood of another species may have a beneficial effect, in so far as (*a*) it furnishes the recipient with nutritive material; (*b*) that it supplies the recipient with the oxygen of the dissolved blood-cells and fluid; (*c*) that under given conditions it improves the mechanical relations of circulation. 5. Beginning and end of blood-excretion by the urine: if this is voluntarily passed by the animal, of course it varies somewhat. Hæmoglobin and albumen were found one and three-quarters to two and a half hours after transfusion, in the urine; it usually ceased after twelve hours. The amount of blood, the mode of transfusion, and the action of the circulatory system, have an influence in this respect. 6. If foreign blood is transfused into an animal, its *own* blood-cells may also degenerate. This is the case when the blood-cells of the recipient are easily soluble in the blood-serum of the received blood. Herein lies the danger of all considerable tranfusions in the rabbit, whose blood-corpuscles are very soluble. 7. In animals having easily-soluble blood-cells, for instance, the rabbit, the transfusion of many varieties of serum, as those of the dog, man, hog, sheep, and cat, calls forth very alarming symptoms according to the quantity introduced; increased frequency of respiration, dyspnœa, convulsions, even death or asphyxia. In specimens of the blood the process of solution of the blood-cells may often be observed in all stages, and the serum is ruby-red: if the blood transfused is in sufficient quantity, and life continues long enough, hæmoglobin and albumen are found in the urine. 8. Animals with resistant blood-cells, e. g., the dog, can endure the transfusion of other varieties of serum, as from the sheep, ox, hog, without these symptoms. The serum serves the purposes of nutrition before it can either affect or dissolve the blood-cells. 9. If, in case of abundant transfusions, a rapid and considerable solution takes place, either of its own, or of the foreign blood, extensive coagulations, in consequence of fibrination, are frequently observed, which may be followed by a fatal result.

E. F.

On Insensible Perspiration in Diabetes Mellitus Insipidus.—The uncertain views which are held concerning the insensible excretions of diabetic patients have led F. Bürger (*Archiv. für klin. Med.*, 1873) to investigate this subject in several cases at the Tübingen clinic. Although Nasse had proved, by special experiments, that diabetic patients did not absorb water while in baths, it has been asserted that, instead of perspiration, an insensible attraction of moisture from the air takes place, which assertion was based on the fact that these patients apparently excrete more water by the urine than has been introduced in the way of food, without causing any diminution in the weight of the body. The experiments of the author were made on a child affected with diabetes insipidus, and on two adults with diabetes mellitus; the weight of the subject having been determined at the beginning and end of a period of twelve or twenty-four hours, the appreciable increase was added to the former, the appreciable losses to the latter weight. The difference was credited to the insensible losses. For comparison, healthy individuals, of equal age with the patients, were also submitted to experiment. The results proved that in diabetic patients the insensible perspiration, as already indicated by the dry skin, is much diminished. Without a corresponding loss of body-weight, however, the gains never exceeded the losses. Thus, in the child, the insensible losses, at three different periods in twenty-four hours, amounted to 685, 544, and 537 grammes, or 8 per cent., while another girl of the same age, healthy, and of about the same weight, lost 901, 683, and 949 grammes. In the adults the results were similar. In both patients the insensible loss amounted to 8.3 and 4.3 per cent. of the general loss; according to Vierordt, the normal loss ought to amount to 32.33 per cent. From these results the deduction can be drawn that almost the entire watery excretion is undertaken by the kidneys, and that the polyuria is paramount to the polydipsia.—*Med. Chir. Centralblatt*, 51, 1873. E. F.

Treatment of Catarrhal Jaundice by Electricity.—Dr. Gerhardt, of Berlin, first determines the position of the gall-bladder by percussion at the free border of the liver. This can often be detected by a small, rounded prominence at the inferior convexity of the liver, and can be easily made to project. The electrode of a strong inductive electric machine is applied at this point, while the other electrode is applied at the other side of the median abdominal line. Almost always, when the current is powerful, a gurgling sound can be heard, and very often the fæces resume their natural color, and the cure is effected.—(*Ber. klin. Wochenschr. and Lyon Méd.*, 1874.) E. F.

Treatment of Vesical Concretions.—For the removal of so-called vesical incrustations, concretions adhering to the walls of the bladder, Reliquet (*Allg. Wiener Zeitung*, 1872) recommends the daily long-continued irrigation of the bladder with water. In this malady the folds of the mucous membrane are approximated by vesical spasm, giving rise to diminished capacity and stretching of the organ, and are connected by the incrusted masses. Provided the bladder is distended by a fluid, the folds of mucous membrane are smoothed out, and the incrustations are softened and washed away. If the injection of larger quantities of water is impracticable on account of the great sensibility of the bladder, Reliquet recommends the application of the constant galvanic current, applied by means of an instrument in the form of a catheter. Immediately after a sitting, large quantities of water can be injected into the bladder without producing any pain. E. F.

Iodine in Anthracosis.—At a meeting of the Academy of Sciences of Paris, July 27, 1874, M. Banly presented, in the name of M. Cézard, a memoir on the treatment of anthracose diseases in man and animals by a method called "antivirulent."

This method of treatment is based on experiments reported to the Academy by M. Davaine, in October, 1873. A young man, a tanner, having become infected from some skins prepared in his shop, noticed an anthracose œdema of the palpebræ. This affection is usually considered fatal in that country, hence a consultation was called. M. Cézard, at the suggestion of M. Davaine, treated the case by hypodermic injections of iodine solution of $\frac{1}{500}$. The patient soon recovered. The same treatment was also adopted with success in subsequent cases. The germs of this disease, when it is epidemic among animals, may be destroyed by sprinkling the forage or the pastures with $\frac{1}{5000}$ solutions of sulphuric acid. In using the antivirulent treatment, the system must also be well supported by stimulants, among which the carbonate of ammonia in large doses is the best. In using iodine, twice its weight of iodide of potassium is to be added, to increase the solubility and diminish its irritating properties. In extreme cases, the intravenous injection of iodine may be resorted to without hesitation. The treatment of these diseases by the actual cautery, or by cauterization with concentrated solutions of sublimate, is not in accordance with the progress of science, and is very inefficacious.

Malignant pustule should be treated in the commencement by the incision of the eschar and the application to the seat of the disease of compresses soaked in a $\frac{1}{100}$ solution of iodine and iodide of potassium, which will in a short time have penetrated by imbibition and absorption to all parts of the viruliferous tissues, and will thus soon produce a rapid and radical cure. There will be little if any loss of substance. It has been found by experiment that a $\frac{1}{12000}$ solution of this liquid will soon destroy the virulence of anthracose fluids without the organism, and a much weaker solution can prevent and even destroy its virulence within the organism.—*La France Méd.*, No. 62, 1874. G. R. C.

Destruction of Tumors by Potassium Bromide.—Dr. Peyraud has communicated to the Medical and Surgical Society of Bordeaux the result of applications of pulverized potassium bromide to tumors of the face.

Dr. Peyraud, having noticed that this salt had the property of arresting the circulation locally, and that a concentrated solution injected hypodermically produced cicatrices, was induced to try it in the case of an extensive cancroid of the face. The tumor covered the gums, the molar region, and was also invading the left inferior palpebra. Compresses were soaked in a concentrated solution of bromide and applied to the tumor. As the solution did not produce the desired effect, the tumor was covered with the salt finely powdered. A thin, grayish eschar was soon formed. The applications were continued, and after twenty-eight days the tumor had disappeared, leaving nothing but the base by which it was connected with the deeper tissues. The applications were not painful.

Dr. Peyraud thinks that the bromide acts by arresting the capillary circulation rather than by the destructive mechanism of ordinary caustics. He also refers to a case of severe hæmoptysis which had proved rebellious to all treatment, but which ceased on the administration of the bromide in large doses.—*Bull. Gén. de Thérap.*, July, 1874. G. R. C.

Muscular Contraction in Apparent Death.—Dr. Labordette, in a communication on the contraction of the masseter as a sign of life, says that the laryngeal speculum, after having triumphed over the contraction of the masseter, is of service in recalling life; the contraction ceases on its application. On every occasion in which he was able to make the trial, it was found that, on the restoration to life, the jaw closed as soon as the instrument was withdrawn. If, on the contrary, the introduction is maintained, the elastic force, which Voisin says is due to trismus, becomes neutralized, and the obstacle to the introduction of air being thus overcome, the patient inspires and lives. If the speculum be introduced into the mouth of a cadaver, the remarkable fact becomes manifest, that, though the instrument is inserted very deeply, it does not become fixed. It may be withdrawn and the mouth will remain open, corresponding with the absence of contraction in the masseters. In this way the double advantage is obtained of having a proof of death if the mouth remains open and a means of recalling the life of the patient if the mouth closes. Any one can introduce the speculum and thus assure himself whether death has really taken place.—*Gaz. Méd. de Bordeaux*, July, 1874, and *Gaz. Med. Ital., Prov. Ven.* G. R. C.

Argillaceous Cataplasm.—M. Vigier, pharmaceutist, has submitted to the examination of the Therapeutical Society of Paris a method of medication for wounds which is used in veterinary surgery and also in arboriculture, but which had not previously been used for man.

The epithem which he recommends has for its base such clay as is used by sculptors. Glycerine, which has a preservative property, is mixed with the clay, making an agreeable mixture which is easy to manage and is readily spread out on strips of muslin. One part of glycerine is mixed with two parts of clay. In consequence of its homogeneousness this preparation, when applied to wounds, also serves as a means of occlusion, and, by its adherence to the skin and the dressing, slipping about is prevented. It may be easily removed with the aid of water. Putrefaction does not take place, suppuration is diminished, and cicatrization is hastened. The dressing should be covered with a thin sheet of gutta-percha to prevent evaporation.—*Bull. de Thérap.*, July, 1874, and *Gaz. Med. Ital., Prov. Ven.* G. R. C.

Sero-Albuminous Epistaxis.—In the Société Méd. des Hôpitaux, M. Champouillon cited a singular case of sero-albuminous discharge from the nostrils occurring several times in an individual who was otherwise perfectly healthy. On the first occasion, in 1856, an abundant discharge of a fluid occurred, which was coagulated (when left to stand and cool), and, by heat or nitric acid, inodorous and without the admixture of blood. This phenomenon recurred eight times in fourteen years, and was always preceded by itching of the nasal mucous membrane, by redness of the face, heaviness of the head without headache, and was always consequent upon mental exertion. Champouillon having explored the nasal fossæ without finding any thing abnormal, looks upon it as a discrasic flux, a sero-albuminous filtration from the nasal mucous tissue, and explains the accident by an analogous mechanism to that which precedes the expectoration observed after thoracentesis. M. Brouardel had seen an analogous case in the practice of Velpeau. In that case, the discharge was composed of very fluid mucus, and proceeded from a dropsy of the maxillary sinus, which supervened upon mental efforts.—(*Gaz. Hebdomadaire*, September 12, 1873.) E. F.

Topical Use of Opiates in Neuralgias.—Though the application of morphine to blistered surfaces is often useful in certain neuralgias, the salts of morphine are no longer absorbed when the sore begins to dry, and it becomes necessary to renew the blister. In such cases Joulin found great advantage in the application of laudanum two or three times a day, until complete cicatrization had taken place. Rousseau's laudanum is preferable to that of Sydenham for this purpose. The pain following the first application of the laudanum is not greater than that caused by the muriate of morphine, and is not renewed when the inflammation caused by the blister has ceased.

This method of applying opiates permits of a more prolonged narcotic action. Recent experiments have shown that, when the skin is intact, there is but slight absorption of liquid substances, though it takes place readily when the skin is the seat of an active irritation. The absorption is less rapid after a sinapism than after a vesicant.—(*Gaz. de Joulin*, and *Gaz. Med. Ital. Lombard.*, No. 25, 1874.) G. R. C.

Destructive Action of Bile on Hydatid Cysts.—Dr. Landouz has made an interesting communication to the Physiological Society, which shows the destructive action of bile on hydatid cysts. A young man, twenty-nine years of age, entered the hospital to be treated for a persistent jaundice, which was accompanied by severe general symptoms, and persistent and abundant epistaxis, and which finally caused his death. At the autopsy a cyst of the liver was found to be under process of recovery. The hydatid vesicles were to some extent corrugated, and communicated freely with an ulcerated biliary duct. The ductus choledochus was almost completely obliterated by hydatids which had entered it. The action of the bile having caused the death of the hydatids, suggested to Dr. Landouz the treatment of these cysts by the injection of bile. He recommends that the injections be made through capillary punctures, to obviate the possible penetration of air. —(*Bull. de Thérap.*, No. 6, 1874.) G. R. C.

Powder for preventing the Cicatrization of Small-Pox Pustules.—Dr. Pennavaria, of Sicily, recommends a powder composed of four parts of flowers of sulphur and one of red precipitate, for preventing the cicatrization of small-pox pustules on the face. He was induced to use the powder for this purpose from having found it extremely useful in many cutaneous diseases, especially eczema and acne. In using it, a drop of glycerine is placed on the pustules, and the powder sprinkled over this. The crust becomes detached in a few days, leaving the skin intact, without even a stain.—(*La Salute*, June, 1874, *and Gaz. Med. Ital.*, *Prov. Ven.*) G. R. C.

Gratuitous Consultations.—The General Council of Administration of the civil hospitals of Lyons adopted the following resolution at its meeting of June 3, 1874: "On and after July 1, 1874, no person shall be entitled to gratuitous consultation in the civil hospitals of Lyons, except on the presentation of a *recent certificate of indigence*, given by the mayor of the arrondissement or commune, the commissaire of police of the quarter, or the pastor or curate of the parish in which the consultant lives."—*Union Méd.* and *La France Méd.*, No. 60, 1874.

G. R. C.

Miscellany.

Appointments, Honors, etc.—Mr. Erichsen visited the various hospitals and colleges during his recent sojourn in this city. It is understood that the following will be the staff of the Maine General Hospital: The Medical staff, Drs. Dana, French, Small, and Thayer. Surgical staff, Drs. Tewksbury, Green, Weeks, and Gordon, with Dr. Hunt as resident-physician. Dr. D. K. Shoemaker has been appointed Physician to the Port of Philadelphia.

Surgeon-Major Porter, Assistant Professor of Military Surgery at Netley, has been presented with the Bronze Cross by the French Societies for Aid to the Sick and Wounded of Armies, in recognition of his services during the late Franco-Prussian War. Baron Rokitansky, who is now above seventy, has, by special decree, been requested to lecture as heretofore on Pathological Anatomy. He retains his other appointments of Medical Referee at the Ministry of Public Instruction, etc. Dr. Soubeiran, Assistant Professor in the Paris School of Pharmacy, has been appointed Professor of Pharmacy in the Montpellier School. A bust of the late Mr. T. P. Teale, of Leeds, has been presented by his widow to the Leeds Infirmary. Dr. Edward Warren, of Cairo, has been promoted by the Khédive to the position of Chief Surgeon of the Egyptian Army. M. Claude Bernard has been chosen Director of the French Academy. Dr. Alleyne Nicholson has been appointed to the chair of Biology and Physiology in the Durham University College of Medicine, Newcastle-on-Tyne. Dr. Rutherford has been elected to the chair of Physiology in the

University of Edinburgh. Three medical men were seriously injured in the late railroad accident near Norwich, one of whom, Mr. Francis, has since died.

Bellevue Hospital Clinics.—The Medical Board of Bellevue Hospital have passed a resolution that the clinical lectures shall be open to all graduates in medicine and to all medical students who have taken the hospital ticket. Clinics will be held as follows:

Monday.—Medical, F. Delafield, M. D., 1½ P. M.; Surgical, H. B. Sands, M. D., or Thomas M. Markoe, M. D., 2½ P. M.

Tuesday.—Medical, A. Clark, M. D., 1½ P. M.; A. M. Loomis, M. D., 2½ P. M.

Wednesday.—Surgical, E. Krackowizer, M. D., 2–3 P. M.; J. W. S. Gouley, M. D., 3–4 P. M.; Medical, J. M. Smith, M. D., or William B. Eager, Jr., M. D., 1–2 P. M.

Thursday.—Surgical, F. H. Hamilton, M. D., 1½ P. M.; Medical, W. H. Thompson, M. D., 2½ P. M.; E. G. Janeway, M. D., 3½ P. M.

Friday.—Medical, A. Flint, M. D., 1½ P. M.; Surgical, Stephen Smith, M. D., 2½ P. M.

Saturday.—Surgical, J. R. Wood, M. D., 1½–2½ P. M.; Erskine Mason, M. D., 2½ P. M.

Archives of Dermatology.—The first number of this journal was issued October 1st. It contains a large amount of excellent matter, including original papers by Drs. J. Lewis Smith, F. J. Bumstead, R. F. Weir, Charles R. Drysdale, R. W. Taylor, and Howard F. Damon. It also contains, and will contain regularly, the Transactions of the New York Dermatological Society. Interesting cases, fresh translations, and reviews, with a variety of carefully-selected miscellany, make the present number a very attractive one, and we have no doubt Dr. Bulkley will receive sufficient encouragement to justify even greater efforts in the future.

Registration of Physicians.—Dr. H. T. Hanks, 149 Lexington Avenue, New York, Secretary of the Board of Censors of this county, has issued a circular (containing a copy of the law now in force regulating the practice of medicine and surgery in this State) to the practitioners of the county of New York, requesting every qualified physician to fill and return a blank, giving full name and residence, place and date of graduation, or name of society granting license, with date of same, for the purpose of registration. We hope all will respond promptly, and thus aid the censors in their work. The following are the censors of the county: John C. Peters, M. D., Abraham Jacobi, M. D., Gouverneur M. Smith, M. D., Andrew H. Smith, M. D., Horace T. Hanks, M. D.

Proposed Hospital for Cancer.—Madame Letitia Rattazzi, one of the members of the Bonaparte family, has for some months been visiting the principal towns of Europe, to study the ways and means of establishing a hospital which shall be especially devoted to the treatment of cancer. As is well known, several of the members of this family have succumbed to this terrible disease. The first deposit will be 150,000 francs, to which will be added a biennial prize of 5,000 francs for the best work on the subject, as well as a sum of 20,000 francs for him who shall describe the true cure for cancer.—*London Medical Record.*

The Tri-States Medical Association.—A meeting of this Association, representing the States of New York, Pennsylvania, and New Jersey, was held in Port Jervis, September 2d. The President, Dr. B. G. McCabe, of Middletown, delivered the annual address, the subject being "The Physician as an Investigator." The following officers were elected for the ensuing year: President, Avery Cook, of Otisville; Vice-President, I. S. Hunt, of Port Jervis; Corresponding Secretary, W. W. Appley, of Cochecton; Recording Secretary, D. H. Decker, of Monticello; Treasurer, George B. Curtis, of Hawley, Pa.

Death from Chloroform.—We learn from the *Boston Medical and Surgical Journal* of the 1st ult., that a Mr. Charles Lincott died, September 26th, in the office of a dentist of Boston, while under the influence of chloroform. The autopsy revealed nothing to account for the death. It is astonishing how little heed is given to the warnings of experience in this matter. If neither patients nor operators can be made to appreciate the dangers of chloroform, it is certainly time the law interfered for the protection of human life.

The Simpson Memorial.—The Simpson Memorial Fund, which now exceeds £6,000, is to be expended in part for a new maternity hospital, and in part for a statue of Simpson. The latter, which will be about twice the size of life, is nearly completed, and will soon be sent to London to be cast in bronze. The late Prof. Simpson is represented as seated, in his gown, and in the act of lecturing. The general effect is spoken of as highly satisfactory, and worthy of the great man whose memory it will perpetuate.

The University of Vienna.—The total number of matriculated students in the University of Vienna during the year 1873–'74 was 7,526; of whom 1,109 were medical students in the winter session, and 1,036 in the summer session. The number of new entries in the medical department was 194. Among the largest medical classes were those of Profs. Brücke (885); Hyrtl (680); Bamberger (540); Billroth (509); Dumreicher (495); Rokitansky (354).

A Medical School for Women in London.—A scheme is on foot in London, according to the *Medical Times and Gazette*, for the establishment of a special school for the instruction of women in medicine. It is said that the provisional council includes such men as Huxley, Burdon-Sanderson, Bastian, and Hughlings-Jackson, that there will be a full series of lectures, and that the chair of Obstetrics will be filled by Mr. Garrett-Anderson.

Journalistic Notes.—We have received the prospectus of a new monthly journal, the *West Virginia Medical Student*, terms two dollars per annum, to be issued in Wheeling, January 1, 1875. Dr. James E. Reeves will be editor and proprietor. Dr. Gaillard's new journal, the *American Medical Weekly*, appears regularly and improves with each number.

The Automatic Man.—The following account of this interesting case is taken from the *Medical Times and Gazette* of August 1, 1874, for which it was translated from Dr. Mesnet's history in the *Union Médicale* (July 21st and 23d) under the title of "Automatism of the Memory and Recollection in Pathological Somnambulism." It is the same case to which Prof. Huxley refers in his recent interesting address on "Animals considered as Automata," which may be found in *Nature* for September 3, 1874:

"As we have already stated, the patient, twenty-seven years of age, had a portion of his left parietal carried away by a ball. Shortly afterward he became insensible, and only recovered consciousness three weeks after, having in the mean time been transported from Sedan to Mayence. He was afterward sent back to France, and at the end of a year had lost nearly all traces of the hemiplegia of the right side which had followed the accident. Three or four months after the injury, the paroxysms, which have rendered the case remarkable, began to appear, and have continued ever since, although they have varied in the frequency of their occurrence (from fifteen to thirty days) and in their duration (from fifteen to thirty hours). During these four years this man has continued to present two entirely different conditions. In his ordinary state he is sufficiently intelligent, and has gained his living as a clerk and as a singer at concerts; and since he has been in the hospital he has been handy in assisting the other patients. His health, also, is perfectly good.

"His passage into a pathological condition is instantaneous and insensible. His senses become closed to all external impressions, and yet he seems to come and go and act as if in full possession of his senses and intellect, so that persons unaware of his singular condition would never suspect it from any thing which they observed on meeting or passing him. His carriage is easy and his countenance calm, the eyes being wide open, with dilated pupils. There is contraction of the brow and eyelids, with constant nystagmus, and a continuous movement of the jaw. If in a place he knows, he walks about entirely at his ease, while when this is strange to him, and when all kinds of obstacles are placed in his way, he endeavors, by aid of his hands, to gently guide himself through these. He offers no resistance to any movements impressed upon him, so that his direction may be changed or his pace changed, exactly as if he were an automaton. During the paroxysms all the instinctive functions and appetites are accomplished as in the healthy state, and he eats, drinks, smokes, dresses, and undresses, at the usual times. These actions Dr. Mesnet is disposed to regard as automatic, the simple result of the habits of his waking hours continued during his sleep, for, on watching him while eating, he is observed to eat with gluttony, and without discernment, scarcely chewing his food, swallowing all that comes to hand without ever seeming satiated. So, also, he drinks whatever is given him, whether wine or nauseous liquids, without manifesting any sign of the impressions produced.

"The general sensibility of the surface is absolutely extinct, as this may be pricked, pierced, or submitted to the electric pile, without any result. The senses of hearing, taste, and smell, are entirely abolished, and various external organs may be irritated in any way without any common sensibility being manifested. Sight, also, is no longer influenced by external impressions; but sometimes the patient seems to have a confused perception of brilliant objects. *Touch is the only sense that persists and places the patient in relation with the external world.* The whole procedure of the patient manifests the delicacy and subtilty with which sense is employed.

"The first of these paroxysms occurred in 1871, and they were, during the year which the wound remained unhealed, of more frequent occurrence, so that the intervals only lasted from five to six days, whereas since that period they have varied from fifteen to thirty days. After some premonitory heaviness of the head, the transition from health to disease takes place almost insensibly in a few minutes, and a conscious and fully responsible being becomes in an instant a blind instrument or automaton, obeying the unconscious activity of his brain, seeming in the possession of a liberty which he no longer has. All his actions and motions are but the repetition of the habits of his waking hours. One peculiar feature not then found, however, is the development on the part of the patient of a desire for the subtraction and concealment of all objects which come under his hands. This propensity has always been manifested from the first paroxysm; and so irresistible is it that, when objects appertaining to others are not accessible, he conceals his own watch, knife, etc. On awaking from his paroxysm he has not the slightest recollection of what has occurred.

"Dr. Mesnet mentions in great detail many examples of the mode in which the sense of touch called forth a whole series of connected actions. Thus, a walking-stick placed in his hand, and mistaken for a musket, called up the recollections of the late campaign and led to his performance of the various acts as if actually engaged in battle. A pen presented to him at once aroused the desire to write, and accordingly he wrote a letter to his general, impressing his claims upon him. It was found that, if an impervious object were interposed between his eyes and the paper on which he wrote, the writing became irregular and illegible; and again, when water was placed in the inkstand in place of ink, he perceived the deception, although attributing it to some fault in the pen, which he frequently rubbed on his sleeve. The conclusion to be drawn from these experiments is, that vision here existed, and was necessary for the written expression of the ideas of the patient; but its field was very circumscribed, and was only aroused by the sense of touch, its exercise remaining limited to the objects with which it was brought in relation by this sense. While walking in the garden the patient would make his cigarette, light it, stamp out the lighted match, and smoke—all exactly as if in his ordinary state. But, when his tobacco-pouch had been removed, and after he had sought for it in the usual place in the most natural manner, if it were placed before and close to his eyes, he never perceived it. Put in his hand, he at once made his cigarette. If while lighting this the match were blown out, it was in vain that another ready-lighted one was brought close to the cigar and close to his eyes, for he saw it not, even when it burned his eyelashes. This, again, showed that while the patient saw certain objects he could not see others, the sense of sight being, in fact, closed to all objects external to himself. He saw his own match, but not that which was offered to him.

"The pathological condition of this patient cannot be confounded with the state of sleep and dreaming, for the dreamer is not always independent of the action of external influences, many of these being capable of giving or changing the direction of his dream. In this patient one sense alone retained its relations with the exterior, and, as far as this is concerned, impressions of this sense may with him, as with the dreamer, call forth corresponding cerebral action. The dream, too, vanishes spontaneously or on the slightest arousing of the senses; but in this patient the life of relation is suspended to such a point that it becomes impossible to arouse him, whatever efforts be made, and however violent the means employed.

"With respect to the medico-legal bearings of the case, Dr. Mesnet observes: 'The disturbance which these functional perversions of the nervous system produce in the exercise of the life of relation extends not only to the organs of the senses and the intellectual acts properly so called, but also sometimes arouses instinctive excitements, which deliver over their subject, defenseless and deprived of discernment and reason, to the most deplorable impulses. He acts with all the appearance of a liberty which he does not possess, and seems to have combined and prepared certain actions, when, in reality, he has been but a blind instrument, obeying the irresistible impulses of an unconscious will. In each of his paroxysms this patient, dominated by the impulse to steal, possesses himself of every object he can lay his hands on, and conceals them dexterously.' "

Granular Conjunctivitis in the Northwest.—Dr. H. C. Hand, in the *Northwestern Medical and Surgical Journal*, gives the following explanation of the causes of the prevalence of granular ophthalmia in that region:

First, we will mention the vast number of immigrants in proportion to our whole population, and that the majority of these live under the most unfavorable hygienic conditions. Reeking in the filth of their own secretions from year to year, in our rigorous winters they have also to contend against a deficiency of fuel, a deficiency of food, and almost an absence of fresh air in their hovels. To all this superadd the depression and homesickness dependent on chagrin at finding that a livelihood can no more be obtained here without labor than in the rest of the world, and we have just such conditions as are favorable to granular ophthalmia, viz., neglect of personal cleanliness, and a debilitated, flabby condition of system. But this is not all: seeking a climate similar to that of their native homes, most of the immigrants from Sweden and Norway take up their abode in the great Northwest. Their bleached and faded hair and skin are but indices of their lymphatic, sluggish temperaments. Their habits in the old country, together with their total want of resisting power against the onsets of disease, have sufficed to produce many cases of obstinate granular inflammation, which they bring with them to further nurture and propagate in their new homes. As a matter of fact, it must be stated that the majority of our cases of granular conjunctivitis, all, of the far advanced and inveterate ones, have been among this poor class of the population—the most of them among the Scandinavians and Irish. No particular coincidence has been noticed between this disease and scrofulous manifestations, although the condition of anæmia and waxy whiteness of the complexion with which it has generally coincided might almost be sufficient to classify it with the scrofulous lesions.

There seem, too, to be some properties inherent in our location which are peculiarly favorable to the development of chronic inflammations in exposed mucous surfaces. Hence the chronic nasal and pharyngeal catarrh, and the less frequent bronchitis. The conjunctiva, by reason of original structure, under these persistently irritating influences assumes the granular form of inflammation. In our winter days, with the thermometer from twenty to thirty degrees below zero, every one must have noticed the positively painful effect which exposure of the eyes induces, and how greatly that effect is aggravated if but the feeblest wind be stirring. At night, after a day's exposure to such influences, the eyes feel hot and uncomfortable, the lids heavy, with a tendency to close, and the conjunctiva is seen to be injected. The night follows, bringing partial restoration; but the next day and the next, for weeks and perhaps months, repeat the process of the day before, with the occasional addition to the dry, cutting wind of countless snowflakes which mercilessly pelt and dazzle the poor eyes until they can scarcely see at all. The night of such a day finds the eyes much worse than usual, and if the lids be examined they will be found intensely injected and studded with small, hard granulations.

Spring brings a period when every thing favors a return to a normal condition, but the summer with its clouds of limestone dust, in our cities at least, suffices to revive the trouble of the former winter.

All these disease-causes, however, never seem capable of producing a really serious granular ophthalmia in persons of good constitution, with a disease-resisting power, and who are in such walks of life as to pay proper regard to personal cleanliness. The worst in them is only a matter of discomfort and inconvenience during a certain proportion of the days of a year. Far otherwise with the poor, the filthy, the ill-fed, the lymphatic foreigner; too often, whether he have brought the disease with him or contracted it here, he here encounters those conditions which are capable of nurturing it until his sight is nearly or quite destroyed; and those organs which once were the avenues of "heaven-born light" become only an ever-abiding source of offense to others and of pain to himself.

Veritable Pigmies.—Rome is at present lionizing two little men brought by Prof. Panceri from Cairo, as a present to the King of Italy from their discoverer, Miani, the Central African explorer, who, like Livingstone, lost his life in travel. Homer, Herodotus, and Aristotle, contain notices of the dwarfish tribes on the Upper Nile and in parts of Arabia and India—notices which have been corroborated by Schweinfurth, who actually saw some pigmy jugglers of the Akka tribe at the court of King Munza, in Monbattu. The two specimens now in Rome belong to that very tribe, located in the equatorial regions to the west of the Albert Nyanza Lake. The two Akkas left by Miani were examined and described by Schweinfurth, Owen, and Cornalia; while Prof. Panceri also made an accurate study of them. They seem to be about ten or fifteen years old. The names given to them by Miani were Thibaut to the elder, after his late friend, the French consul at Khartoum; and Chair-Alla (Good-of-God) to the younger. They speak the dialect of their tribe, different from any known African language, and imperfectly understood by the Egyptian sergeant, a native of Soudan, who accompanies them, as the sole survivor of the escort with which Miani penetrated into Monbattu. Their stature in Khartoum in November last was —Thibaut, 0 m. 88 c.; Chair-Alla, 0 m. 78 c. In Cairo last February, 1 m. 11 c., and 1 m. 00 c.; in Cairo in May, 1 m. 12 c., and 1 m. 00c.; and in Naples on the 21st ult., 1 m. 15 c., and 1 m. 02 c. Schweinfurth's Akka died on the journey, between fifteen and sixteen years of age, when he was 1 m. 25 c., and had ceased to grow. The jet-black sergeant who accompanies them, and acts as their interpreter, is tall of stature, and was presented to the king along with the pigmies. For his fidelity to Miani, the king presented him with the ribbon and medal of Civil Valor, besides a pair of handsome revolvers and a purse of Napoleons. The pigmies are under the care of the Royal Geographical Society of Italy. They were at first to have been educated at the Chinese College at Naples; but, that being under Jesuitical influence, the Senator Miniscalchi Erizzo, a member of the Geographical Society, has offered to take and educate them in his villa on Lago Maggiore. Meanwhile they are staying at the Suez Hotel, where they are fond of angling for the gold and silver fish in the ornamental tank in the garden. They are intelligent in manner, but resent being too much lionized, and are prone to scratch the ladies who kiss them!—*Lancet*, June 20th.

Belladonna in Spasmodic Asthma.—Dr. George G. Wood, in the *Philadelphia Medical Times* of September 19th, gives the result of his experience with large doses of belladonna in the treatment of asthma. He says:

"I usually employ the tincture of the United States Pharmacopœia, in doses ranging from twenty to sixty drops. The strength of the tincture differs so much, as commonly kept in shops, that the size of the dose must be lost sight of, and the quantity given be regulated by the effect produced. It may be given during the paroxysm with great advantage, but it acts best when given before the attack commences. For example, if the patient has nocturnal attacks coming on after midnight, as is usual, give him a dose just before going to bed, and repeat it if necessary to produce sound sleep. He fails to awake at the usual time for the attack to commence, and sleeps on, awakening in the morning very much refreshed and strengthened. This treatment may be repeated night after night, until sufficient time has been had to remove the tendency of the disease to return, either by changing his location or adopting other requisite treatment, as the case may call for. I could relate several cases to prove the above statements, but will have to omit them for want of space.

"Sometimes, but not often, belladonna produces dryness of the fauces, and delirium. These are indications which show that it should be discontinued, and hydrate of chloral should be employed in its stead. It may be used on the same principles as belladonna to produce sleep and thus ward off attacks. For the past two years I have been treating spasmodic asthma on these principles, and with most satisfactory results."

The Action of Veratrum Viride.—Dr. H. C. Wood, Jr., assisted by Dr. Joseph Berens, publishes in the *Philadelphia Medical Times* (August 22d and following numbers) a series of elaborate investigations into the action of veratrum viride upon the circulation. The following results have been arrived at regarding veratroidia:

"The action of this alkaloid upon the circulation is altogether subordinate to its influence upon the respiration.

"In minute doses it stimulates the cardiac inhibitory nerves or nerve-centres, but when given in sufficiently large doses it finally paralyzes the peripheral inhibitory cardiac nerves.

"It exerts some action upon the heart-muscle or the contained ganglia; this action is probably a sedative one, but it is very feeble, and is only distinctly perceptible when the drug is precipitated at once upon the heart, or when the dose given is much above that required to arrest respiration. To kill the heart-muscle very large amounts are required.

"Upon the vaso-motor system veratroidia acts as a depressant, but its influence is feeble, much less intense than its action upon the pneumogastrics. When artificial respiration is maintained, it can be given in such doses as to paralyze the vaso-motor centres."

The Form of the Cavity of the Uterus.—Hagemann (*Archiv f. Gynäcol.*, Band v.) has made a series of plaster-of-Paris casts of the interior of the uterus, and finds that the form of the uterus in a new-born child is distinctly bicornuate, a crista media being still visible as a remains of it in the virgin at puberty. Women who have had children and old people have still some indication of it in a marked prominence of the walls at the point of entry of the Fallopian tubes. In childhood the uterus is very narrow from before backward. In multipara the transverse diameter, just above the orificium internum, is very considerable. On the other hand, in virgins the cervical canal is half the whole length of the uterus. The cervical canal is widest near its centre. The cristæ of the plicæ palmatæ are situated the one in front and to the left, the other behind and to the right. The retrogressive metamorphosis of the uterus after birth does not affect the whole uterus equally, but chiefly the placentary region.—*Lancet.*

Promptness in Operating in Strangulated Hernia.—In illustration of an opinion strongly held by M. Després, that the sooner the operation is performed the more likely is recovery to take place, he publishes the results of the thirteen cases of strangulated hernia that have occurred in his practice at the Cochin during eighteen months of 1872–73. In seven of these, in which no attempt at reduction was made prior to the operation, three recoveries were obtained; while, of six upon which no operation was performed, only one recovered. He strongly protests against the use of the taxis and other modes of treatment now in vogue for the cases ordinarily brought to hospitals. The mortality from strangulated hernia, taken generally, in the French hospitals amount to 70 per cent., while in those cases that are operated upon in good time it is only 58 per cent.—*Gazette des Hôpitaux.*

Rest in Pulmonary Consumption.—Dr. Berkart has recently instituted a novel treatment of pulmonary consumption. He thinks that rest, which plays a most important *rôle* in the treatment of surgical diseases, must also be of signal service in that of parenchymatous inflammation of the lungs. The respiratory movements of, and the contact of the atmosphere with, the inflamed portions of the lung cannot, he thinks, but exert an injurious influence on the progress of the disease. Dr. Berkart maintains portions of the lungs at rest by means of strapping and bandages. He is sanguine, from the results which he has hitherto obtained, that this mode of treatment may be of valuable assistance in coping with such a protean malady.—*British Medical Journal.*

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from September 14 *to October* 13, 1874.

MAGRUDER, D. L., Surgeon and Medical Director.—Granted leave of absence for one month from 26th instant. S. O. 87, Department of Arizona, September 24, 1874.

SMITH, JOSEPH R., Surgeon.—When relieved by Assistant-Surgeon Koerper, to proceed to Fort Monroe, Va. S. O. 190, Military Division of the Atlantic, September 24, 1874.

HUNTINGTON, D. L., Assistant Surgeon.—Transferred from Department of the Columbia to Department of California. S. O. 203, A. G. O., September 16, 1874, assigned to duty as Post-Surgeon at Angel Island, Cal. S. O. 101, Department of California, October 1, 1874.

BROOKE, JOHN, Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Cape Disappointment, W. T. S. O. 124, Department of the Columbia, September 4, 1874.

PHILLIPS, HENRY J., Assistant Surgeon.—To report in person to the commanding general, Military Division of the Atlantic, for assignment to duty. S. O. 218, A. G. O., October 7, 1874.

KINSMAN, JOHN H., Assistant Surgeon.—Leave of absence extended to November 1, 1874. S. O. 205, A. G. O., September 18, 1874.

KOERPER, EGON A., Assistant Surgeon.—In addition to his duties at Detroit, Mich., to relieve Surgeon Joseph R. Smith of his duties at Fort Wayne, Mich. S. O. 190, C. S., Military Division of the Atlantic.

LORING, L. Y., Assistant Surgeon.—Assigned to duty at

Camp Apache, A. T. S. O. 86, Department of Arizona, September 18, 1874.

Corson, J. K., Assistant Surgeon.—Granted leave of absence for one month, provided he furnishes a suitable substitute during his absence. S. O. 161, Department of the South, October 7, 1874.

Ewen, C., Assistant Surgeon.—Granted leave of absence for twenty days from October 1, 1874, on condition that he furnish, at his own expense, a suitable substitute during his absence. S. O. 135, Department of the Gulf, September 9, 1874.

Obituary.

Dr. Francis Edmund Anstie, whose death occurred September 12, 1874, was born in 1833, and received his early medical education at King's College. He was appointed Assistant Physician to and Lecturer on Forensic Medicine in Westminster Hospital in 1860, and subsequently exchanged his lectureship for that on Materia Medica, which he held for many years. In 1864 he published his well-known work on "Stimulants and Narcotics." His last work was that on "Neuralgia," on a second edition of which he was engaged at the time of his death. Dr. Anstie was for several years a regular contributor to the *Lancet*, and in July, 1869, became sole editor of the *Practitioner*, a journal which took a high rank in medical literature. In 1865 he became a Fellow of the College of Physicians, and a prominent and influential member of that body. He was deeply interested in questions of sanitary reform, and was successful in procuring many legislative measures for the public good.

The untimely death of Dr. Anstie is a loss to be deplored by the entire profession. In the words of the *Lancet*, "Medicine, although rich in sterling workers, can ill afford to lose such a man, and the manner of his death aggravates the painful sense of his loss. It was too costly a life to have been sacrificed prematurely in so pitiful a way." From the *Lancet* we take also the following particulars of Dr. Anstie's death:

"The schools of the Patriotic Fund at Wandsworth had been visited by a somewhat strange succession of illnesses, and at last some of the children were attacked by a rapidly-fatal form of peritonitis. Dr. Anstie was called in to the assistance of the medical officer, and he made a careful examination both of the premises and of the patients. He was at the time suffering from overwork and want of rest, and was perhaps hardly in a state to undertake the oftentimes dangerous duty of a medico-sanitary inspection; but, after accomplishing it, he made, on Sunday, the 6th, a *post-mortem* examination of one of the children who had died from peritonitis. While thus engaged, the middle finger of his right hand was accidentally punctured by a needle. He sucked and washed the wound immediately, and on Tuesday mentioned the occurrence to some of his friends, but expressed a hope that no harm would result from it. On Wednesday he felt ill, and complained of pain in the right armpit. During the afternoon he was so chilly that he sat before a fire wearing an overcoat. Dining with a friend in the evening, he spoke of having poisoned his hand, and said that he had so much pain in the armpit that he feared he should have an abscess there. He still complained of feeling cold, and appeared to be depressed in spirits. On Thursday he was confined to his bed, and Mr. Brudenell Carter found him with a dry tongue, a dry, hot skin, and complaining of distressing headache, and of much pain over the right pectoral region. During the day the symptoms increased in intensity. After a restless night, the patient was still worse on Friday, and the assistance of Dr. George Johnson was obtained, who has favored us with a narrative, which we give in his own words:

"'I first saw Dr. Anstie with Mr. Brudenell Carter at 3 P. M., on Friday, the 11th inst. He was then delirious and quite unable to give a history of his illness. The tongue was dry; the temperature was 105°; there was an erysipelatous blush, about the size of the palm of the hand, over the right pectoral muscle; there was excessive tenderness on pressure in the right axilla, and over the front of the chest on the right side; the slightest movement of the arm elicited a cry of pain; there was no appearance of inflammation about the wound on the hand or up the arm. At half-past nine in the evening I again saw the patient, in consultation with Dr. Burdon-Sanderson and Mr. Carter. His condition remained unchanged. At half-past nine on Saturday morning I again met Mr. Carter. We found the breathing was very rapid; there was a distinct friction-sound over the middle and lower lobe of the right lung, and dullness on percussion over the same space;

the erysipelatous redness and the tenderness on pressure remained the same. The urine was highly albuminous, and contained numerous epithelial casts. About the middle of the day symptoms of a blood-clot at the right side of the heart came on; the features were livid; the breathing rapid and shallow; consciousness was rapidly lost, and death occurred at half-past 2 P. M.

"'It was not thought necessary or desirable to make a *post-mortem* examination. The nature of the disease was obvious. A poison absorbed from the wound of the hand had caused diffuse cellulitis over the right side of the chest, acute pleuro-pneumonia, and general blood-poisoning. I may add that Dr. Sanderson entirely concurs with me in the opinion which I have here expressed as to the origin and nature of Dr. Anstie's illness.'"

Dr. J. Leupoldt, ordinary Professor of Pathology, General Therapeutics, Psychology, and History of Medicine, in the University of Erlangen, died on August 21st, at the age of eighty years. Dr. Leupoldt had been actively engaged in lecturing since his appointment, nearly fifty years ago, to the chair of Medicine, the duties of which he continued to fulfill to within a short period of his death.

Arthur Jacob, M. D., F. R. C. S. I., died September 21st, aged eighty-four years. Dr. Jacob held the position of Professor of Anatomy in the Royal College of Surgery, Dublin, for forty-three years, and was three times chosen president of the college. He was widely known as an active member of the profession during a long and honorable career.

M. Elie de Beaumont, Secretary of the French Academy of Sciences, died recently from apoplexy. He was Fellow of the Royal Society of London, and the author of many works on geology and metallurgy.

Dr. J. Romuald Marinus, Secretary of the Royal Academy of Belgium, died recently, in his seventy-fifth year.

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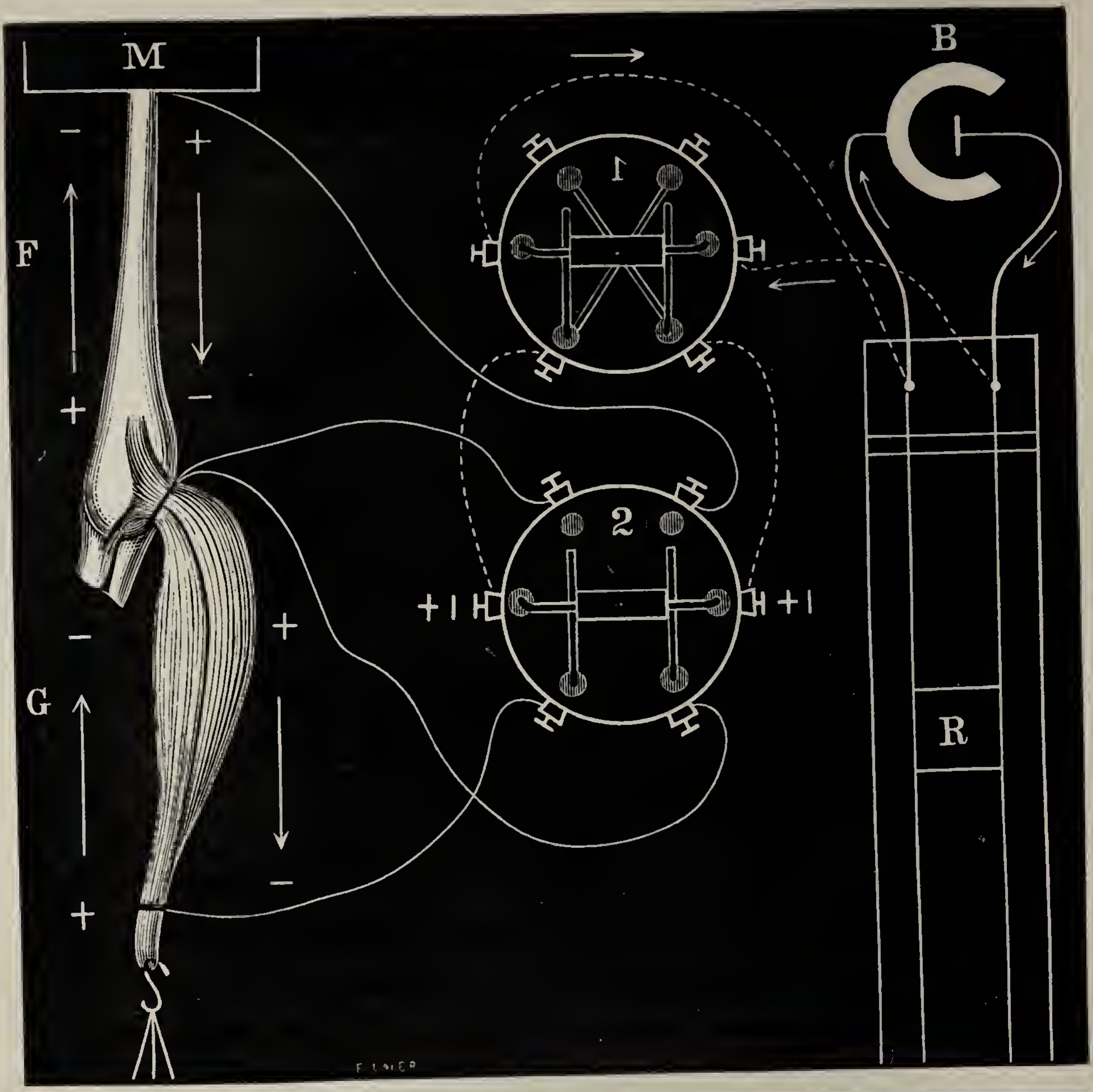

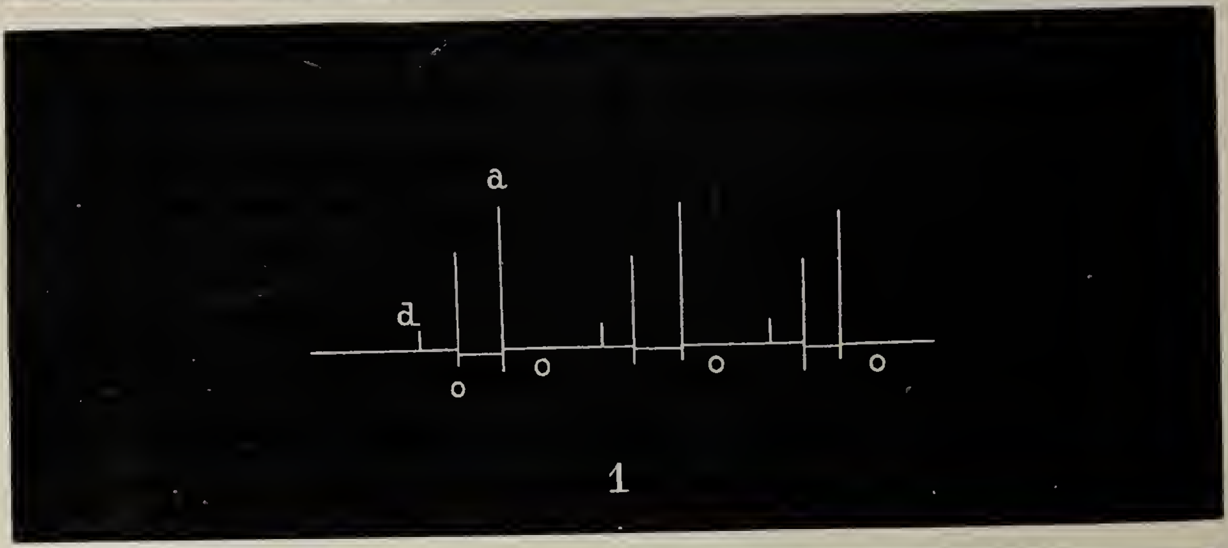

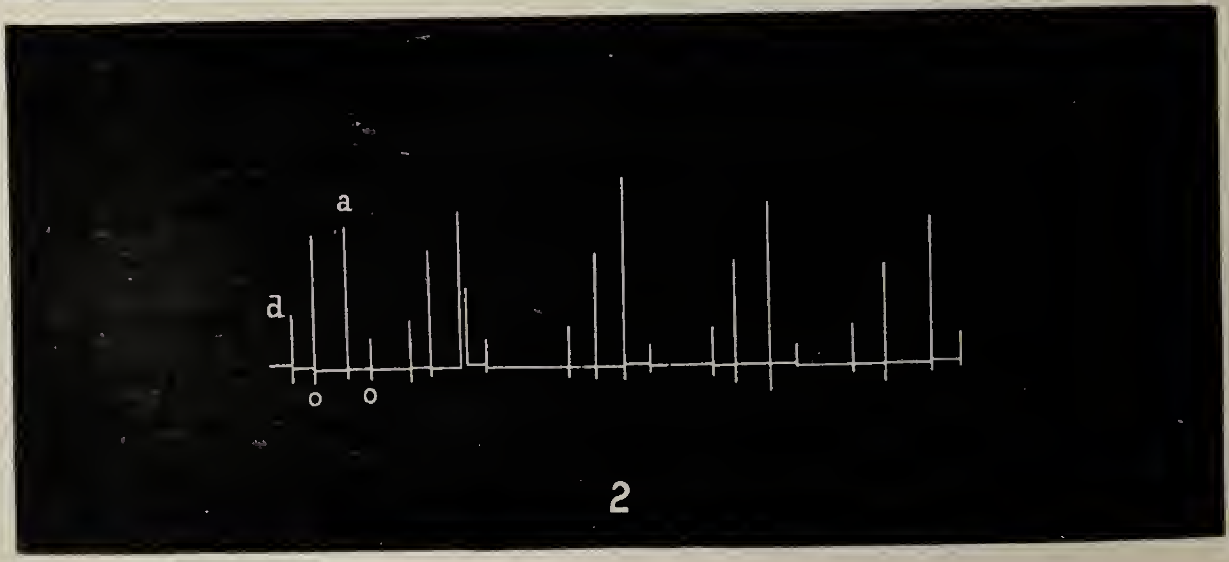

DR. MASON ON THE POLAR ACTION OF ELECTRICITY IN PHYSIOLOGY.

(*See page* 593.)

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Original Communications.

ART. I.—*Insanity; its Nature, Pathology, and Treatment.*

By EDWARD C. MANN, M. D., Medical Superintendent of State Emigrant Lunatic Asylum, Ward's Island, New York.

FROM the earliest period in the history of medicine, mental diseases have been recognized, more or less classified and treated, as a rule, as worthy of the utmost attention that science and humanity could dictate. As far back as the days of Hippocrates, insanity was recognized as appearing under different forms and conditions of mind. Hippocrates, in writing of insanity, mentioned three states in which mental disease was manifested: mania, melancholia, and dementia. Celsus also recognized three kinds of insanity. The old Roman laws divided the insane into two classes: *furiosi*, those who were violent and maniacal; and *mente capti*, those who were suffering from dementia, or weakness of intellect. The ancient writers, although very crude in their ideas of insanity, recognized, as a rule, the different mental states accompanying mania, melancholia, and dementia. Different writers, in modern times, have attempted various methods of classification; but the simple and yet comprehensive one of Pinel has really been the foundation-stone on which all succeeding writers have reared their modern systems of classification. The classification just alluded to includes the four great primary mental states or conditions of insanity, namely: mania, melancholia, dementia, and idiocy. As most writers on insanity prefer to enlarge on such simple classifications, and elaborate them somewhat, the question arises, What are the best grounds on which to found our classification? This question has been ably answered by many writers. The etiology, or causes of insanity, has been made the basis of two very excellent classifications; the first, by Dr. Morel, in his "Traité des Maladies Mentales," published in 1860; and the second, a later and more elaborate one, by Dr. Skae. The International Congress of Alienists, at their meeting in Paris, in 1867, adopted a combination of the etiological and symptomatological methods under seven heads: 1. Simple Insanity; 2. Epileptic Insanity; 3. Paralytic Insanity; 4. Senile Dementia; 5. Organic Dementia; 6. Idiocy; 7. Cretinism. Drs. Bucknill and Tuke, in their "Manual of Psychological Medicine," third edition, 1874, have adopted a combination of the symptomatological and psychological method of classification. They have divided it under five heads, or divisions, as follows:

I. Idiocy, Imbecility, and Cretinism; states of undeveloped intellectual power.

II. Dementia; a state in which the intellectual power has been destroyed.

III. Delusional Insanity; under which head they embrace all states in which marked delusions are present: melancholia, with delusions; monomania, with delusions; and homicidal and suicidal insanity, with delusions.

IV. Emotional Insanity, or morbid states of the emotions, without delusion, whether attended by melancholia or excitement.

V. Mania. In conclusion, it is remarked that "all these forms or varieties of insanity are liable to complication with epilepsy, or, if acquired, with general paralysis."

These classifications are for the most part excellent for study; but, for actual practice, the simpler the classification the better for the general practitioner.

Etiology.—In the study of mental diseases, the first great question that naturally presents itself to the mind is, What are the causes of insanity? As in all other diseases, we find them to be both predisposing and exciting. The first and great predisposing cause is, hereditary predisposition. This has been noticed from the earliest history of the study of insanity. Esquirol observed and traced hereditary predisposition in about one-fourth of all his cases of insanity. Guislain estimated hereditary predisposition at thirty per cent. of all cases of insanity. Michéa gave the opinion that at least one-half if not three-fourths of all the insane have either had at some past time, or have at the present time, some cases of insanity in their families. At the York Asylum, during twenty-seven years, from 1846 to 1872, hereditary predisposition was traced in thirty-one per cent. of all the admissions. With regard to hereditary predisposition, it has been determined that, as a general rule, if the mother is insane, the disease is more frequently transmitted to the offspring than if the father be affected; and also, the mother's influence in transmitting insanity to girls is much more to be dreaded than if the offspring be a boy; likewise, as regards the father, insanity being much more certain to appear in male offspring, the father being affected, than in the female. There are, of course, many exceptions to this rule; but the laborious researches of M. Baillarger have been accepted by the best authorities as highly probable, if not conclusive. It has also been proved that the lower forms of insanity, as imbecility, and also depression of mind, are in a marked degree hereditary. It has been remarked that the outbreaks of insanity, in persons who inherit a predisposition to it, generally make their appearance, and seem to be in some manner connected with, the growth and processes of evolution of the individual, as the periods of puberty, childbirth, climacteric period, etc.

Insanity also may appear either in the same form in succeeding generations, or it may assume an entirely different form of insanity, or even of nervous disease. Thus, it is common to see cases in which, the parent suffering from mania, the offspring may develop symptoms of epilepsy or chorea. Some authors have held that nothing was transmissible to the offspring but an aptitude, or predisposition, to some disease of the nervous system, and that the development of any particular type or form of nervous disease was largely the result of circumstances subsequent to birth. The diseases most frequently presenting themselves as the result of hereditary predisposition have been found to be, aside from the typical forms of insanity, hypochondriasis, apoplexy, paralysis, epilepsy, convulsions, chorea, hysteria, and neuralgia. Undoubtedly, next to hereditary predisposition, may be ranked, in the present day, as a predisposing cause of insanity, the great mental activity and strain upon the nervous system that appertain to the present age and state of civilization. The same feverish haste and unrest which characterize us as a nation to-day, and the want of proper recreation and sleep, tend to a rapid decay of the nervous system, and, sooner or later, the most overworked and overstrained minds stagger beneath the excessive burden; and, one by one, brilliant intellects and sterling men are lost to the world, who, if they had exercised moderation in their respective pursuits, might have been spared for years to enjoy the fruits of their industry. Among other predisposing causes may be mentioned those included by the International Congress of 1867, namely, great difference of age between parents; influence of sex; of surroundings; convulsions, or emotions of the mother during gestation; epilepsy; other nervous diseases; pregnancy; lactation; menstrual period; critical age; puberty; intemperance; venereal excess; and onanism. Among the exciting causes of insanity may be mentioned—trouble, and excessive grief; intemperance; excessive excitement, of whatever kind; epilepsy; disordered functions of menstruation; pregnancy; parturition; lactation; fevers; injuries to the head or spine, and overwork. With regard to intemperance, it has been calculated that from twelve to twenty per cent. of most admissions to asylums are from this cause. It is a fact of importance that the children of habitually intemperate parents often inherit a predisposition to mental diseases, which generally appear in the form of weakened mental faculties, as in dementia, or that they are entirely wanting, as in idiocy. Domestic troubles and griefs are a frequent cause; and it is roughly estimated that from twelve to fifteen per cent. of admissions are from this cause. Under the head of exciting causes are also included physical causes, as artificial deformities of the cranium, organic disease of the brain, etc.

When we see how readily and inevitably the future mental state and characteristics of the next generation are determined by the health and proper mode of living of the present one, it behooves all physicians, who, perhaps, more than any class of men, are placed in the closest and most confidential relations to their fellow-men, to endeavor to promote such modes of living and thinking, that the descendants of the present generation may be the gainers, and not the losers, by their advice. The very mental states and emotions of a pregnant woman are indelibly impressed upon the offspring; and how important it is that the condition of such a woman should be expressed by the old motto, *Mens sana in corpore sano!* Herbert Spencer, in speaking of the emotions, remarks: "We know that emotional characteristics, in common with all others, are hereditary; and the differences between civilized nations, descended from the common stock, show us the cumulative results of small modifications hereditarily transmitted. And, when we see that between savage and civilized races, which diverged from each other in the remote past, and have for a hundred generations followed modes of life becoming ever more unlike, there exist still greater emotional contrasts, may we not infer that the more or less distinct emotions which characterize civilized races are the organized results of certain daily repeated combinations of mental states which social life involves? Must we not say that habits not only modify emotions in the individual, and not only beget tendencies to like habits and accompanying emotions in descendants, but that, when the condition of the race makes the habits persistent, this progressive modification may go on to the extent of producing emotions so far distinct as to become new; and if so, we may suspect that such new emotions, and by implication all emotions, analytically considered, consist of aggregated and consolidated groups of these simpler feelings, which habitually occur together in experience; that they result from combined experiences, and are constituted of them?"

Diagnosis.—The next question which engages our attention is the diagnosis of insanity, and here not only the astute and experienced physician is needed, but he must also bring to bear upon the case all his knowledge of human nature, and must be a good physiognomist, as very often he will be compelled to make up his mind as to the sanity of his patient by his own unaided resources, depending entirely upon the conduct, conversation, and appearance of the individual. It is often extremely difficult to obtain any thing like a complete or satisfactory history of the patient; as the friends, disliking to acknowledge a taint of insanity in their family, considering it a disgrace, will deny the fact of hereditary predisposition, which is one of the most important facts relating to both diagnosis and prognosis. The question relating to the existence of previous attacks is also one of the most important points to the physician, and it has been remarked that the two facts as to hereditary predisposition and previous attacks are to the diagnosis of insanity what the fact of hæmoptysis is to the diagnosis of consumption. There is often an entire change, in persons becoming insane, as to habits and disposition. One marked case of a young girl, who is at the present time under our charge, may serve to illustrate the diagnostic value of such changes. The young person just alluded to belonged to a healthy family, but her grandfather had suffered from acute melancholia. Her father and mother were both perfectly healthy. She was religiously inclined, never omitted prayers, and was regarded by her friends as in every respect a model young girl. About six months ago, she exhibited an utter change in her habits and actions, from no assignable reason. She talked and acted very strangely, and once or twice undressed herself and persisted in remaining in this condition. She refused to attend church, and, from being a quiet and well-behaved young lady, became precisely the reverse. Upon being called upon to give an opinion in the case, after carefully watching and conversing with her, and finding that her grandfather had been insane, and noting the symptoms above alluded to in her behavior, we pronounced her insane, an opinion which an attack of acute mania, within a week from the time of examination, fully confirmed. There are sometimes marked peculiarities of dress, manner, and gesture, in the insane, which are important when taken in connection with hereditary predisposition, as diagnostic symptoms. As regards the bodily health of the patient, it is important to discover whether there are symptoms of gastric, hepatic, or uterine disease; for, although the mere existence of these difficulties would by no means indicate that a person suspected was really insane, yet, as they are sometimes the remote causes of cerebral disturbance, a proper attention should be paid to them as aids to diagnosis. Regarding the insane physiognomy, it has been noticed that there is oftentimes a marked want of accord in the expression of the different features. To a practised eye, the facial expression in cases of acute melancholia and dementia is easily recognizable. In dementia all lines of expression disappear, and the meaningless laugh and stare, and vacant expression, indicate clearly the nature of the disease. On the other hand, mental disease in some instances leaves no imprint whatever on the features, by which to distinguish the mental state. It is generally easy to recognize acute mania by the symptoms accompanying it: loss of sleep, incoherence of speech, violence of action, hallucinations and delusions, being the most prominent symptoms. In melancholia, the symptoms most frequently met with are sadness, depression of mind, and fear. The expression, too, is very characteristic in this form of insanity. The sadness of countenance, dry and harsh skin, want of clearness in the complexion, and in some instances the terrible expression of fear and dread, which spreads over the patient's face, are perfectly diagnostic marks of melancholia, which are not to be mistaken. In the general paralysis of the insane, the slurring speech, peculiar gait, muscular tremor and trembling of the lips while speaking, are all signs not to be mistaken when once seen.

Prognosis.—The prognosis of insanity is a question of much interest, and is often a very difficult point to determine. The cases most unlikely to recover are those in which the insane temperament or diathesis is clearly manifested, and who inherit a predisposition to disease. Such patients, although they may have lucid intervals, rarely if ever entirely recover. The other types of insanity in which we rarely see cures are imbecility and idiocy, dementia, general paralysis (which is one of the varieties least amenable to treatment) and epileptic insanity. On the other hand, acute mania, acute melancholia, hysterical insanity, and puerperal insanity, not unfrequently completely recover. The first symptoms of recovery are the return of natural tastes, inclinations, and affections, in the patient. Drs. Bucknill and Tuke, in speaking of symptoms of recovery, lay down the following as evidences of restoration of the mind: 1. A natural and healthy state of the emotions; 2. The absence of insane ideas or delusions; 3. The possession of sufficient powers of attention, memory, and judgment, to enable the individual to take his part as a free member of society; 4. Tranquil and reasonable conduct, and say regarding them, "When these four symptoms of recovery coexist, there can be no doubt that recovery has taken place."

Pathology of Insanity.—Owing to the great difficulty and labor incident upon making a thorough examination of the brain in cases of insanity, the pathology of insanity is as yet in its infancy; but already valuable information has been obtained by microscopical investigations, and much more will doubtless be discovered in a few years of microscopical research. Regarding the existence of morbid changes in the brain accompanying mental disease, Portal wrote as follows: "Morbid alteration in the brain and spinal marrow has been so constantly observed, that I should greatly prefer to doubt the sufficiency of my senses, if I should not at any time discover any morbid changes in the brain, than to believe that mental disease could exist without any physical disorder in this viscus, or in one or other of its appurtenances." M. Parchappe, the Inspector-General of Asylums in France, has made very careful and thorough investigations regarding the pathology of insanity, and published the following conclusions: That the pathological changes met with in insanity may be divided into three classes: those which may be considered accidental; those which are found in other diseases, yet appear to be concerned in the production of insanity; and, lastly, those which he considers as essential to mental disease. Among the first he mentions cerebral hæmorrhages, softening of the white substance, and disease of the cerebral arteries. Among the second, thickening and opacity of the arachnoid, hyperæmia of the pia mater and of the brain, serous infiltration of the pia mater, and collections of fluid in the arachnoid cavity. Under the last head, or the changes considered essential to mental disease, he mentions subarachnoid ecchymosis, and a partial punctiform injection of the cortical surface, with or without softening, extended softening of the middle portion of the cortical substance, adherence of the pia mater to the surface of the brain; rose, lilac, and violet-colored discoloration of the cortical substance, loss of color of the cortical substance, atrophy of the convolutions and induration of the brain. In conclusion, M. Parchappe remarks that in acute insanity the prominent alterations are hyperæmic conditions, with arachnoid ecchymoses and injection and softening of the cortical substance; while in chronic insanity the predominant alterations are atrophy of the convolutions and induration of the two substances. Griesinger, the eminent Berlin pathologist, gives, as the result of his labor in the pathology of insanity, the following morbid conditions: hyperæmia of the brain and membranes, thickening and opacity of the membranes, softening of the cortical substance, and pigmentation of the cortical gray substance in acute insanity; while in chronic insanity the principal lesions he noticed were opacity and thickening of the membrane, atrophy of the brain, particularly of the convolutions, chronic hydrocephalus, effusions into the subarachnoid space, pigmentation of the cortical substance, and extended and profound sclerosis of the brain. He remarks that in chronic insanity softening is not so frequently met with in the superficial layer as pigmentation, superficial induration and adhesion of the pia mater.

Histology.—The microscopical investigations of the histologists of the present day have done a great deal in revealing the morbid histological changes which take place in insanity. Regarding the condition of the membranes, it has been found that, while the dura mater is rarely thickened, its vessels are dilated and irregular, and that the coats of the vessels are much hypertrophied. The arachnoid has been found by Meyer to be often covered with fine granulations on its surface, and it has also been found to be the seat of hæmorrhage, and also thickened. The pia mater has often been found thickened, and a hyaline appearance has been noticed around the vessels, which has been attributed in part to the action of reagents. Dilatation of the vessels has also been noticed. In a microscopical preparation, from a case of chronic insanity, in the possession of the writer, the thickening of the pia mater is very marked, and a cut vessel presents very beautifully the marked thickening of the coats. The brain-substance in the same specimen is seen to be dilated where it surrounds the vessels. In another preparation, from a case of chronic mania, the only abnormal appearance is a deposit, scattered throughout the brain-substance, of newly-formed cells containing a nucleus and nucleolus, which show very clearly when viewed with a quarter-inch objective, carmine staining having been employed. The pathological changes observable at the *post-mortem* examination of this case were atrophy of the brain and convolutions, and partial sclerosis of the brain, with thickening of the membranes and slight subarachnoid effusion.

The blood-vessels of the brain have been found to present thickening of the coats, thickening of the sheath or hyaline membrane, deposits between the adventitia and sheath, and proliferation of nuclei. The neuroglia has been found to be the seat of various lesions in insanity, the principal of which are disseminated sclerosis or gray degeneration, atrophy, miliary sclerosis, and colloid degeneration. The cells are the seat of atrophy, pigmentary, granular, or fuscous degeneration, calcification, and hypertrophy. Microscopical examination of the spinal cord in the insane has not revealed any particular lesion except in general paresis. Dr. Westphal describes an atrophied condition of the cells of the posterior columns in general paresis and an increase of the connective tissue, commencing externally and extending inward. Dr. Tuke says that, in most cases of general paralysis which he examined, the cells of the cord were found undergoing the fuscous, granular degeneration before alluded to as affecting the cells of the hemispheres and corpora striata. The cells of the cervical sympathetic have also been found undergoing pigmentary granulation in general paralysis, and also in other forms of insanity.

Treatment of Insanity.—Although it is not generally so regarded, insanity is one of the most curable of serious diseases if promptly cared for and treated. The mistake which is committed every day by foolish friends and relatives, of keeping secret as long as possible the fact of the patient's insanity, thereby depriving him of the necessary care and treatment at the outset of the disease, is often fatal to the prospects of recovery of the unfortunate patient, who is only sent to an asylum when he has become perfectly unmanageable, and the disease has become deeply seated. It has been stated by eminent authority that if persons who were attacked by this disease were cared for as promptly as if they were suffering from an attack of dysentery or fever, eighty or ninety per cent. could be restored to health and usefulness. There is no disease, however, which develops more rapidly if not treated, and tends to induce organic degeneration which renders it incurable. From a financial point of view it pays well to restore the insane as soon as possible to usefulness and health, and thereby save the Commonwealth the cost entailed by the loss of his labor, and also the amount that has to be paid for his board and clothing, which at the lowest estimate amounts to not less than $156 a year, or $3 per week. Dr. Edward Jarvis, of Dorchester, Mass., who has made very laborious investigations upon the subject, in a paper entitled "The Political Economy of Health," presents the following view of the gain or loss entailed upon the State or family of an insane man by his cure, or by his remaining a lunatic for the period of life left to him after his attack. According to Mr. John Le Copelain's table, showing the average longevity of the insane from any given age, it is seen that a man of twenty years of age, if sane, has an average life of 39.48 years, while if insane he has but an average life of 21.31 years if not restored to health. Dr. Jarvis has estimated that, leaving out of sight the ten or twenty per cent. of the insane who are incurable, the average time for restoring to health the insane who apply for treatment upon the early symptoms of disease is twenty-six weeks. At $4 per week, which was the average cost in the three State Lunatic Asylums in Massachusetts for the past year, this amounts to $104, to which is added $30 for each patient, for the cost of rent or interest on the value of the hospital, etc., for six months, making an average cost of $134 for restoration to health. If not restored to health, the family or State must be at an expense of $156 a year for 21.31 years, and must also lose the patient's earnings for the 39.48 years which he would have made if well. The cost of the patient's support is estimated at $2,121, while the loss of his future labor, if he becomes insane at twenty years of age, is estimated at $2,665.37, making a total loss of $4,786.37 if not cured; while, if cured in the average time of twenty-six weeks at a cost of $134, there will be a gain to the family or to the State of $4,652. The foregoing is an admirable argument for sending insane patients to be treated in the early and curable state of the disease, and, if acted upon, would reduce by a large percentage the incurable cases which are now to be found in such great numbers.

In ancient times the insane were regarded as possessed with devils, and were accordingly fastened with chains, handcuffs, and fetters, and confined in cages or dungeons, to drag out their miserable lives as best they could.

As, in the commencement of this paper, we have seen that Pinel was one of the first to properly recognize and classify insanity, so in speaking of treatment we would refer to him, in his humane endeavors and successful efforts to do away with the beating and cruel treatment of the insane, as he has elsewhere aptly been termed, "The Father of the Modern Treatment of Insanity." His pupil, Esquirol, also was the most successful of his immediate successors in carrying out Pinel's ideas in treating insanity and in advancing the scientific knowledge regarding it. The treatment of insanity has improved up to the present day, and the success which has been reached, in abridging maniacal attacks and warding off dangerous excitement, gives us to-day a much different class of patients both in behavior and appearance than could have been found fifty years ago. This change, which has taken place gradually, as the natural result of improved modes of treatment, has not been fully recognized by the profession at large, as the following may serve to illustrate: A physician of large practice visited the asylum under our charge, a short time ago, and, after having been conducted through the various wards of the institution, and noticing the women quietly sewing or reading, while many of the male patients were engaged in out-of-door employments, supposing that only the quiet and convalescent patients had been shown, as is sometimes the case, desired to see the "raving and dangerous patients," and was exceedingly astonished upon being informed that the ward we had just left was the excited ward of the asylum, as the patients had been quiet and polite, and did not show the maniacal glare and ferocity of manner which he expected to see. We took this astonishment as the highest compliment which the gentleman could have possibly paid us, as our patients as a rule come from the lowest class of society, and are not accustomed to a great degree of self-control even when sane. The foregoing is a very simple illustration of what triumphs kindness and moral and hygienic treatment have achieved over the cruel, harsh, and unsympathizing methods which characterized former times. One great rule to be observed in the management of the insane is, that they are invariably to be treated with kindness and consideration. Their peculiarities should never be lost sight of, but should never be made the topic of conversation or ridicule. In the excited state of the nervous system in the insane, a careless or an unkind word is often deeply felt, and all efforts toward a cure may be rendered futile by the patient perceiving in his physician the want of sympathy and kindness of heart which he, above all others, has a right to expect and demand from us.

The insane are as amenable to kindness, as a rule, as sane people, and will almost invariably repay it by good behavior, while the opposite course is quite as sure to counteract all our efforts in their behalf. As in all other diseases, hygienic influences must be insisted on, and pure air, pleasant surroundings, and good food, are of great importance. The mind, to be normal, must be associated with a healthy physical state, and we must in the treatment of the insane attend primarily to these things, and not by any means regard them as beneath our notice. Many people question the propriety of confining a patient in an asylum, private or otherwise, maintaining that, if they can afford to keep the patient at home and provide medical attendance and an attendant for him, he is much better taken care of. This is a very mistaken idea, and one very injurious to the patient himself. One of the most marked characteristics of the insane man is his intense egotism, if it may be so called; or, more properly speaking, it consists, in the language of Dr. Blandford, in an "extreme concentration of the whole thought and ideas on self, and on all that concerns self." At home he is more or less the master of the house, and regards himself, when restrained, as a deeply-injured man, and chafes much more, and is more truly a prisoner, in his own home, than when allowed the comparative liberty of a well-regulated asylum. When in an asylum he loses or merges his identity more or less with his companions, which is an excellent thing for him, as he ceases to be the centre of observation and remark, and is treated and noticed precisely in the same way as are the thirty or forty other patients who are occupants of the same ward. A very striking instance of this kind occurred in a patient of good education who, upon becoming insane, fancied himself the Supreme Being, and insisted upon exercising all the fancied prerogatives of such a being. He became very troublesome and dangerous to those about him, and was entirely absorbed in the contemplation of his own greatness, which idea was fostered by the attention he received and the private room that he occupied. He was accordingly removed from his room to a ward in the asylum containing twenty or thirty other patients, and was given to understand that the amount of his liberty and the privileges which he enjoyed would depend entirely upon his behavior. He at once perceived, and at first angrily remonstrated against, the want of attention paid to his whims and caprices, but soon understood that he was not regarded by the attendants as in any way superior to the other patients, and in their treatment of him was manifested no attention at all to his delusion. Finding his endeavors to exercise his authority fruitless, he gave up his imperious and unrestrained demeanor, and soon submitted quietly to the order and discipline of the institution, and at the present time is one of the best-behaved patients in the ward, rarely recurring to his delusion. Regarding the moral treatment of the insane, the physician's attributes have been well defined by Drs. Bucknill and Tuke, as follows: "The physician who aims at success in the moral treatment of the insane, must be ready 'to be all things to all men, if by any means he might save some.' He must, nevertheless, have a good backbone to his character, a strong will of his own, and with all his inflections be able to adhere with singleness of purpose and tenacious veracity to the opinions he has on sound and sufficient reasons formed of his patient, and the treatment needed to be pursued toward him. With self-reliance for a foundation to his character, it requires widely-different manifestations to repress excitement, to stimulate inertia, to direct the erring, to support the weak, to supplant every variety of erroneous impression, to resist every kind of perverted feeling, and to check every form of pernicious conduct."

Out-of-door work is very valuable for patients in promoting assimilation and digestion, and strengthening the muscular system, and should be employed whenever practicable. Light work gives the patient something to think about, and occupies his mind in a healthful manner, while being shut up constantly in-doors tends to enfeeble the body, and the mind is occupied too often in revolving the delusions which it should be the aim of the physician to banish as far as possible. As it is impossible for the majority of patients to be employed in this manner, it is desirable to find some light employment in-doors. While it is comparatively easy to find employment for women, such as sewing, knitting, washing, and making dresses, the men are not so favorably situated, as the expense of fitting up workshops is so great, that in most instances it is not considered a sufficiently valuable adjunct to justify the necessary outlay. They may be taught, however, to do light work, such as cane-seating chairs, etc., and in such ways occupy their mind and afford them some muscular exercise, however slight. The foreign asylums have systematized manual labor to a much greater extent than in this country; and some of them, as the asylum of Quatre Mares, near Rouen, do a great deal of work in all the trades. Recreation is also more indulged in than in our asylums. At the Fisherton Asylum, near Salisbury, England, which is a private institution, accommodating about six hundred patients, a separate brick building was erected for the purposes of recreation. It is one hundred feet in length, by thirty in width. At one end of the interior of this building is a stage fitted up with all the accessories for private theatricals. At the Prestwick Asylum, near Manchester, is a very large and handsomely-painted room, which is devoted to musical and theatrical entertainments. At the Lunatic Asylum at Ghent, the Hospice de Guislain, are four hundred and seventy male patients, who are variously employed in shoemaking, book-binding, combing flax, making twine, weaving cloth, and in carpenter-work and work out-of-doors. There are also rooms for music and smoking. At the asylum at Clarendon, near Paris, are six hundred patients of the paying class, for whose amusement are provided a library and billiard-room. The best of our own asylums afford, however, as good facilities for amusements as the foreign ones, if not on so extended a scale; while the condition of the patients, and their care and treatment are, as a general rule, superior to those of the foreign asylums. The medicinal treatment of insanity consists in removing, as far as possible, all functional derangements of the system which would retard a cure, and endeavoring, as far as possible, to keep up a healthy state of the system by attending to the proper fulfillment of the functions of the body. We must relieve anæmia and hyperæmia of the brain so far as we are able, and treat symptoms as they appear in the course of the disease. Among the most valuable remedies for use in the treatment of insanity may be mentioned opium, hydrate of chloral, hyoscyamus, digitalis, ergot, bromide of potassium, stimulants, and the use of warm-baths. Opium has been called "the sheet-anchor of the alienist physician." The doses of opium require to be large, as the nervous system is singularly tolerant to large doses in acute mania and in some forms of melancholia, while, in advanced dementia and in general paralysis, the experience of observers warns us to be careful in its employment. Dr. Pliny Earle commences with twenty minims of tincture of opium three times a day, and gradually increases the dose until one drachm or more is administered three times a day. Guislain recommends large doses, but commences with two grains, which he increases to ten or fifteen grains, as required. Drs. Bucknill and Tuke relate the case of a carpenter's wife who was affected with suicidal melancholia, who was cured by the administration of large doses of morphia, and who was obliged to take eight grains of the muriate of morphia daily. When taking this enormous dose, she was cheerful and enjoyed good health, her tongue being clean and the pulse good, but when the dose was diminished she again became depressed.

The hydrate of chloral has proved to be a very valuable remedy in the treatment of insanity, often procuring refreshing sleep when all preparations of opium fail. It has been shown to be most useful in mania with sleeplessness and restlessness, in doses of from thirty to sixty grains. The great advantages that it possesses are, that it does not constipate the bowels, does not disturb digestion, the doses do not require to be increased, as is the case with opium, and the sleep produced by it resembles natural sleep more than that produced by most other narcotics. From our own experience, we would decidedly recommend the combination of chloral with morphia, or chloral with hyoscyamus, as being preferable to either alone. In very violent cases of maniacal excitement with sleeplessness and dangerous exhaustion, and weak pulse, a dose of twenty grains of hydrate of chloral and one-quarter of a grain of morphia has produced a long, natural, healthy sleep, from which the patient has awakened refreshed and invigorated, and, after a few repetitions of the dose on successive nights, the symptoms have disappeared, or have been greatly relieved. When the chloral has been given in connection with hyoscyamus in maniacal excitement and sleeplessness, fifteen grains of the hydrate of chloral and one drachm of the tincture of hyoscyamus have been administered at night, and the dose repeated in two hours if sleep was not induced, and the results have always proved the success of the treatment.

The use of digitalis has been advocated by Dr. Lockhart Robertson, and by Dr. Duckworth Williams, his successor, at Hayward's Heath, England. They claim that digitalis is a valuable sedative in both recent and chronic mania, and also when these forms of insanity are complicated with general paresis and epilepsy. The dose they employ ranges from half a drachm to one drachm of the tincture, this dose being continued for some days and then gradually decreased. Stimulants are necessary to ward off the dangerous stage of exhaustion which accompanies or follows acute maniacal excitement, and is contraindicated only when there is excessive plethora.

The fluid extract of ergot is used to overcome the cerebral hyperæmia, which is an attendant upon many phases of insanity, and acts by exercising a controlling influence upon the calibre of the intercranial vessels by virtue of its power over the non-striated muscular fibres and cells contained in the contractile coats of the vessels. It reduces excitement, shortens the attacks, and widens the interval between them. In epileptic mania it often prevents the recurrence of the attacks, and, in short, does all, and even more, than was first claimed for it by Dr. Browne, of the West Riding Asylum, when he recommended its use in recurrent mania, in chronic mania, with lucid intervals, and in epileptic mania. The dose employed should range from one-half to one fluid-drachm of the fluid-extract of ergot, three times a day for as long a period as necessary to reduce the cerebral congestion. Last, but not least, may be mentioned the use of warm baths, which are of inestimable value in asylum practice. The tranquillizing effect of a warm bath in relieving cerebral irritation and in promoting sleep is often wonderful, after all other means have failed. Patients with excessive maniacal excitement, hot head, dilated pupils, tongue thickly furred, and a high temperature in the axilla, have repeatedly passed a comfortable night, after having remained for half an hour in a warm bath at a temperature of 100°. This, in connection with a dose of chloral and morphia or hyoscyamus, will often suffice for the relief of acute mania if repeated on successive nights, if good, refreshing sleep can be induced. Enough has been said, however, to show clearly that we can lay down no definite plan of treatment for any number of cases, but must, in every instance, if we expect to accomplish a cure, study the constitution and idiosyncrasies of our patient, and treat him accordingly. By so doing, we shall often have the satisfaction of seeing apparently hopeless cases restored to society, and families rendered happy which had been broken up by the visitation of this fearful disease.

ART. II.—*Erysipelas; its Etiology, Pathology, and Abortive Treatment by Quinine and Opium.*[1] By F. LE ROY SATTERLEE, M. D., Ph. D., Professor of Chemistry, Materia Medica, and Therapeutics, in the New York College of Dentistry, etc., etc.

IN giving the results of my experience in the use of quinine and opium in the treatment of erysipelas, it is a pleasurable duty to acknowledge here my authority for this method of cure.

I feel all the more desirous of giving credit to Surgeon Richard S. Satterlee, Brevet Brigadier-General, United States Army (now retired after forty years' active service), for the reason that he has never been a publicist of any of the varied original experiences which his wide opportunities and the direction of his mind have developed; and it satisfies to me a sense of personal gratitude for valuable results imparted, to make record, in this instance, of my definite acknowledgment. In the investigations regarding the uses of quinine, General Satterlee, and his colaborer at that time in this field, Dr. Harney, United States Army, seem to antedate other observers in this country, at least those having like large opportunities for arriving at authoritative results: the first named having, in the Western prairie-country, in Central Florida as medical director of the army of General Taylor, and in Mexico of that of General Scott, a basis of varied observation concerning this drug, which, together with the opportunities of tentative practice in the hospitals (under arbitrarily-maintained conditions), should give positive value to the deductions of a clear and decisive mind.

It was early in the second quarter of the century that these experiments with quinine, in many morbid conditions, were commenced by General Satterlee; and it seems to me to be an element of value in the investigation that the numerous conflicting, "*ex-cathedra*" statements regarding quinine effects, now current, did not then exist, to create in advance such set opinions regarding its use as to embarrass with fears or even develop such partisanship as to reject inquiry. Among the definite conclusions that he arrived at was, that quinine, being a specific antidote to the poison producing malarious diseases, should be administered in one large dose to produce its complete effect in annihilating the poison, rather than to depend upon small and repeated doses, which in most cases fail to eradicate the disease, or perform that office slowly, sometimes only modifying the action of the poison, to let it reappear. He also found that the sometimes-disagreeable effects produced by a large dose of quinine were completely avoided by using in combination a small dose of opium, with the additional effect of increasing its antiseptic and antiperiodic action. This combination of quinine and opium was found to be peculiarly successful in erysipelas, and the statistics show not a single case lost where this plan of treatment was followed. In this paper I propose, after giving a short *résumé* of the nature and pathology of erysipelas, to review the various treatments of the disease with their results, and then to give my experience with this method and my theory of its action.

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[1] Read before the New York Dermatological Society, November 3, 1874.

In Holmes's "Surgery" erysipelas is defined as "a diffused, spreading inflammation of the skin, involving more or less deeply the subcutaneous tissues, preceded and accompanied by febrile action, and dependent on constitutional causes;" and Dr. Tilbury Fox, in his book on "Skin Diseases," classes erysipelas under the following heading: "Eruptions of acute specific diseases (zymotic)—which are of contagious nature, of definite course and duration, accompanied by fever; the result of poisoning of the blood by special viruses." We may look upon true erysipelas, then, as a skin-disease, the result of a peculiar morbid state of the blood; and, in dealing with this disease and its modifications, we shall not include those diffuse cutaneous inflammations which may be and are properly classed under the head of erythema, but rather that characteristic inflammation which is attributed to a specific determining cause or constitutional disturbance, as miasm, exposure, local irritation, or inoculation. In reference to its mildness or severity it has been denominated simple, phlegmonous, or œdematous, which are merely degrees of one and the same state, chiefly influenced by the state of the patient's health, his temperament, habits or external conditions, and the quality of the virus.

All authors agree that erysipelas depends upon a morbid state of the system, beginning in the blood, which, as in the exanthemata and in typhoid fever, manifests itself in an altered local condition and in general febrile action. In some instances it seems to be epidemic and contagious, several members of a family being successively taken down with it, or the attending physician or nurse contracting it, and in some cases visitors from a distance have taken it away with them and died after reaching their homes. Many times it has been remarked that successive tenants of the same bed in a hospital, where a severe case of erysipelas had been, have been seized with the disease after their admission. It is probable that the same causes in the atmosphere which produce erysipelas in one patient will excite it in others breathing the same air, where their systems are in a state to receive it. An atmosphere tainted by noxious effluvia, either of itself generates the poison or predisposes to its reception; so also impure air by bad ventilation, exposure to cold and moisture, improper and insufficient diet, intemperance, violent exciting or depressing emotions, local injury, debility after other diseases, etc., are noted as exciting the development of the disease. It has been observed that patients having the rheumatic or gouty diathesis, and women with amenorrhœa or dysmenorrhœa, are especially liable to be attacked by it. Indeed, women suffer from it more than men, in the proportion of seven to four, although it is less fatal with them.

There is considerable variety in the intensity and complication of the symptoms of erysipelas; but, in order to vividly picture before us a severe typical case, we will first review the general symptoms and then the appearance and course of the eruption, which is the principal outward sign, and has occasioned the cognomen of "St. Anthony's Fire," or "The Rose."

The constitutional disturbance which ushers in a case of erysipelas, and forms its first stage, may sometimes be so slight as to pass unnoticed—a general feeling of languor, sore-throat, loss of appetite, thirst, bitter taste in the mouth, and precordial pain—or we may have the severer symptoms of high fever from the incipiency, with distinct rigors, and painful deglutition. Generally there is disturbance of the alimentary canal —nausea, vomiting, and diarrhœa—or constipation (as in the bilious form, where the countenance assumes a yellow color). The tongue is at the first dry, with a yellow coating which becomes dry, brown, and fissured later in the disease. Urine scanty, high-colored, and acid, abounding in urea, with diminution of chlorides; in severer cases, containing albumen and renal epithelium, and depositing amorphous lithates. Blood drawn in the early stage generally shows the buffy-coat—the blood-corpuscles are diminished in number according to Andral and Gavarret; and Schönbein says that the serum is always tinged yellow by the coloring-matter of the bile.[1] In mild cases we have drowsiness, with aching and oppression in the head; in severer forms, excitement and delirium, either of a wandering character, or, it may be, of the most active kind, sometimes resembling delirium tremens, which may be followed by coma and death. The temperature rises fast at the outset, even during the rigors, reaching, it may be, 104° in a few hours; it may increase, as the disease progresses, to 106°. In some cases the temperature is intermittent, rising and sinking as the eruption increases or declines. In fatal cases the temperature is very high before dissolution. The lymphatic glands are swollen in the neighborhood of the part where the eruption appears, and, if there is a healing wound on the body, the edges become disunited and flabby, granulations pale, and secretion from them is unhealthy.

The commencement of the eruption of erysipelas marks the second stage of the disease. The part of the body first attacked may have a tingling and itching sensation, which increases to burning and smarting pain, although there are cases where only tenderness on pressure is present. On examination the skin is found red, tense, and shining, swollen and hot to the touch. The color may vary from a reddish yellow to a deep livid hue. The inflamed surface has a distinct elevated margin, sharply defined, which can be recognized by both the eye and hand; it has a tendency to spread widely in all directions, or it may disappear in one spot and break out in another; usually it spreads from the point first attacked. The redness disappears on pressure, and returns immediately on its removal. If some part of the head is attacked, it may spread over the whole face and scalp. The nose, ears, lips, eyes, and cheeks, swell enormously, so that sight and hearing are greatly interfered with. Dr. Watson says: "I know of no disease, except, perhaps, confluent small-pox, by which the human face divine is so completely and speedily deformed and disguised. A stranger seeing a young female in the height of the disorder, and revisiting her after her recovery, is astonished at the change. It seems as if, by some magic process such as we read of in our nursery-tales, a hideous monster has been metamorphosed into a comely damsel."[1] After a few days there appear on the inflamed surface miliary vesicles, or large bullæ, which burst and form incrustations; or there may be no vesication. In mild cases the inflammation is quite superficial, and desquamation of the cuticle follows its subsidence. In this milder form the disease lasts from seven to ten days, and by Mr. Holmes is not considered formidable unless it attack the head or face. A distinctive characteristic of erysipelas is its tendency to spread from the point originally invaded. In the severer forms, and in cases where the disease attacks broken-down constitutions, more dangerous symptoms set in, and, if not arrested by active treatment, it quickly passes into what is called the third stage of erysipelas, where the hard, brawny state of the skin gives way to the soft, quaggy condition. The subcutaneous areolar tissue becomes involved, that is, infiltrated with serum, which produces the tumefaction just alluded to, followed by suppuration and gangrene, which is especially liable to occur about the scalp and face. The disease now advances with destructive violence—the fascia, intermuscular septa, sheaths of the vessels, the tendons and joints, become involved; the bones, being denuded of periosteum, are necrosed. While this is going on, the deep-seated organs are attacked. First we have severe inflammation of the fauces and larynx, the submucous tissue of the glottis and epiglottis is filled with serum or pus, the larynx closes, and the patient dies suddenly of *apnœa.* In other cases the inflammation spreads to the encephalon, there are serous effusion, and coma and death; and, when the autopsy is held, serous fluid is found beneath the arachnoid and in the cerebral ventricles, with turgidity of the veins of the pia mater. There is another way in which erysipelas may terminate fatally: the patient may become very weak, without any marked delirium or stupor; the surface grows cold, the pulse almost imperceptible, until the heart ceases to act, and we have death by gradual *asthenia.*

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[1] Simon's "Animal Chemistry," vol. i., p. 277.

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[1] Watson's "Practice of Physic."

Having stated the three principal modes of fatal termination, we will look for a moment at the *prognosis* of erysipelas before taking up the pathological anatomy of the eruption. Holmes says that the simple, uncomplicated form of erysipelas, under favorable conditions, will last from six to ten days before resolution. Tilbury Fox states the average duration of cases to be ten or twelve days. But, in the severe forms, or when complications ensue, or the patient is old, cachectic, or intemperate, the disease may last for weeks, or reach a fatal termination suddenly. The prognosis is more favorable in the traumatic variety than in the other forms. In studying the pathology of erysipelas, we find distinct morbid characters in the blood, which at first resembles that in inflammatory disease, the fibrine being abundant with the formation of the buffy-coat. The corpuscles are much altered—irregular and broken-up, like the disintegration of corpuscles seen in fatal cases of typhoid fever; the internal organs are all found congested after death. In the eruption we find the marked characteristic morbid appearances, the corium and subcutaneous tissues being infiltrated with inflammation-corpuscles. "The blood-vessels are also much enlarged; in addition, bullæ are formed by the separation of the layers of the rete, and the horny layers of the epidermis, the cells of the rete being elongated so as to form fibres, which themselves are so arranged as to form meshes. In addition to the formation of bullæ in the epithelial layer and the infiltration of the corium and deeper parts by corpuscles (escaped white blood-cells), there is something else; the outer and inner root-sheaths of the hair-follicle are separated by fluid effusion, which may also detach the hair from the papilla."[1] During a six months' epidemic of erysipelas in the city of Halle, in the year 1868, MM. R. Volkmann and F. Steudener made careful observations in about sixty cases, publishing their results in their paper on "The Pathological Anatomy of Erysipelas," in which they say, "There is a very numerous and wide-spread emigration of the white blood-corpuscles, so that the skin and subcutaneous cellular tissue during the height of the eruption of the erysipelatous inflammation, on examination, exhibited a very fine cellular infiltration." On examining a section of the erysipelatous skin under the microscope, they find the blood-vessels greatly dilated, "the papillæ almost entirely filled with the rising loops of capillaries. On closer observation one sees these vessels of the skin accompanied by a large number of fine granular cells, which have the appearance of white blood-cells, or pus-corpuscles, often arranged in rows along the sides of the vessel;" they also saw "bands of white blood-cells covering the blood-vessels." They conclude the article with the statement that it is their belief that "the high pyæmic fever, and the so frequent swelling of lymphatic glands, are connected with the rapid and great destruction of the exuded white blood-globules."[2]

As regards the treatment of erysipelas which has been in vogue at various times by different authors, we are embarrassed at its conflicting nature, and the empirical tendency with which it has been carried out. In some instances, and indeed the most ancient method, we find bleeding and antiphlogistic remedies recommended; others insist upon stimulants and a supporting treatment; while still a third class of physicians put more faith in simple external applications. Again, we find Dr. Watson saying that "the more you see of the disease the more you will be convinced that it is not to be cut short by any particular mode of treatment; that it will run a certain course;" and Velpeau and many others have expressed the same opinion. But, before giving you our own treatment, which we claim is thoroughly abortive of the disease, it will be interesting to review the different treatments in use.

In Dr. Watson's last edition of his "Practice of Physic," we find recommended, iron and quinine in small tonic doses, beef-tea, wine and stout, with external use of ferruginous preparations. Under this treatment he states the average duration of the disease to be twelve days. Dr. Balfour uses iron internally, one and a half to two ounces of the muriated tincture per day, but states that it cannot be exhibited when there is any derangement of the secretions of the liver or bowels (a very common complication), and in some cases he has found the remedy "perfectly inert." I see that this iron-treatment is more recently advocated by Dr. Chisolm, of Baltimore,[1] who claims to have aborted the traumatic variety in two days, while the other forms, he states, "will also yield promptly to this treatment, *with scarcely an exception*."[2] But he also says that, in some instances, the disease is "rebellious to this antidotal remedy." While giving full credit to the value of iron in the milder forms of erysipelas, it is my opinion that the cases where it failed were the severer forms of the disease, in which my experience shows iron to be inefficient if not inert.

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[1] Tilbury Fox.

[2] *Centralblatt*, August, 1868.

Dr. Copland recommends the free use of iron and wine, after having used full doses of calomel and camphor, followed by turpentine and castor-oil, and blisters to the neck and thighs. Some use lotions and ointments of mercury, perchloride or sulphate of iron, or the application of tincture of iodine, collodion or lunar caustic, fomentations and blisters. Dr. C. Hutchinson advocates free incisions into the eruption, the cuts being one and a half inch in length and two or three inches apart; while Mr. Lawrence more heroically advises one long incision, the whole length of the inflammation, even though it reach from one end of the limb to the other, and endanger the life of the patient by hæmorrhage.

A somewhat milder method is that recommended by Sir Richard Dobson, where he scarifies twice to four times a day, making each time from ten to fifty punctures—claiming great success, having treated many hundred patients in this way—although it is not stated how many were killed or how long the disease lasted by this method. Dr. De Morgan tries to abort the disease during the first two or three days by iron, collodion, and compression bandages. If he does not succeed in checking it, he resorts to incision "freely and decisively." In the last edition of Dr. Tilbury Fox's excellent work on "Skin Diseases," we find recommended the early use of inunctions of lard after painting the eruption with a solution of nitrate of silver in spirits of nitric ether. The parts are covered up to exclude cold, and heat is applied, and, if much pain, warm lead, belladonnæ, or poppy fomentations. He also advocates in all cases early incisions in suppuration and for the relief of tension. Internally he uses the tincture of steel in large and frequently-repeated doses.

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[1] October number of the NEW YORK MEDICAL JOURNAL.

[2] The *italics* are my own.—F. L. R. S.

Having reviewed rapidly the various methods resorted to in the treatment of erysipelas, including those at present in high favor, we are ready to give our own method, which was mentioned at the beginning of this paper, and to which I have given the name of the quinine-and-opium treatment; and I hope to be able to show you its advantages both as to its simplicity, safety, and rapidity of action. It consists in the administration of one, two, or three full doses of the sulphate of quinine combined with enough tincture or elixir of opium to moderate the disagreeable effects of the quinine upon the head, and to assist sleep. If called at the beginning of an attack of erysipelas, I administer, to an adult, twenty-five to thirty grains of the sulphate of quinine, dissolved in one and a half ounce of water, which is readily accomplished by the addition of a little dilute sulphuric acid; a few drops will completely dissolve the powder and a clear solution will be formed: to this I add fifteen minims of McMunn's elixir of opium, and we have a draught which, although very bitter to the taste, is not so disagreeable to take as a small powder of quinine; in fact I have on one occasion administered sixty grains of quinine, dissolved in three ounces of water, in one dose, to a patient with a very obstinate and long-standing intermittent fever, and the remark he made to me some time afterward was that he "was so glad that I had given him that draught *instead of quinine*, as he had taken a great many quinine-powders for over two years, and they were very unpleasant to take, without doing him much good." Having ordered a draught, as just stated, containing twenty-five or thirty grains of the sulphate of quinine, I direct the erysipelas patient to take it all at once on retiring for the night. It will usually be retained by the stomach without difficulty; if, however, the stomach is irritable, I prescribe a mustard-plaster about the size of the hand, to be applied, ten or fifteen minutes before taking the dose, under the left breast; this procedure I have found unfailing in quieting the stomach so that the draught is retained. In one case, where the fauces were greatly inflamed and deglutition very painful, I had an equally good effect by administering the dose by the rectum. After this draught the patient usually has a very good night, sleeping well and perspiring freely; and, on examination at the end of twenty-four hours, we find the temperature and pulse have fallen greatly, the general symptoms have either disappeared or been very much improved. In some cases we have some deafness and noise in the head from the quinine, but in the majority of instances the opium seems to entirely remove this after-effect of the drug. The eruption markedly diminishes, and I have seen many cases where a single draught has completely aborted the disease. In all cases I direct the patient to observe simple hygienic rules, use a stimulating diet, with free draughts of lemonade where there is biliousness, a simple cathartic in cases of constipation, and no external application whatever.

This is my treatment in the incipiency of a mild attack of erysipelas. But in any and all of the varieties and severer forms of the disease, or where I do not see the case until it has advanced several days, I commence treatment in the same manner, but, at the end of twenty-four hours, or on the second evening of my attendance, I administer a second quinine draught, and, if necessary, a third at the end of forty-eight hours. In my experience this has been entirely successful in the most severe types of the disease, the eruption and general symptoms passing away with rapidity. The patient makes an excellent recovery under this mode of treatment, the appetite comes speedily, and there is very little debility experienced. Twenty-four or at most forty-eight hours is all that is required to abort the disease by this treatment. Having used it for three years in a large number of cases, I have never found any disagreeable after-effects; on the contrary, the general health of the patient is improved, and this is the experience of all those, whom I have known, who have employed this plan.

In attempting to explain the action of quinine used in this manner in thus aborting erysipelas, we may simply express our opinions and belief, hoping that the future will develop more positive data as to its action in morbid states of the blood, for more accurate demonstration.

Assuming the putrefactive and inflammatory states of the blood, in the production of microzymata, to emanate from the *migration of white blood-corpuscles* (from the authority below given), and accepting the following-named results of quinine action in *preventing such migration*, and, as the best known agent therefor, the use of quinine is not only indicated theoretically, and the successful practice to be anticipated, but its use in *efficient doses* at the outset is as clearly set forth, and as certainly, as the use of any antidote in its full and early power in any case of poison to be mastered and neutralized. As I have stated, Dr. Tilbury Fox and others give the escape and migration of white blood-corpuscles as the cause of erysipelas.

For a more definite authority as to the effect of quinine in these morbid conditions of the blood, and the resulting parasitic organisms, I will quote fully from the valuable article of Dr. E. Buchanan Baxter, in the November (1873) number of the *Practitioner*,[1] suggesting that a fuller reference to the statements of his investigation will be found additionally confirmatory of the position taken. Dr. Baxter says: "Cinchona-bark and quinine are universally allowed to be antiperiodic, antiseptic, and antiphlogistic. The first of these adjectives denotes their specific influence over the fevers, and other morbid states caused by the paludal miasm; the second, their curative virtue in septic conditions of the blood; the third, their power to restrain the migration of colorless blood-corpuscles from the vessels, and thereby to arrest, or at any rate control, the violence of suppurative inflammation. . . . No really adequate conclusions as to the antiseptic power of the cinchona alkaloids were possible so long as the intimate nature of the putrefactive process remained unknown. The circumstance that it depends on the evolution of a multitude of extremely simple organisms, narrows the area of the inquiry very materially. The question as to the antiseptic properties of quinine and other substances resolves itself into the question of their action upon microzymes. . . . A temperature of 100° C. (and probably much less) abolishes both the locomotive and the reproductive power of the microzymes; both the phenomena referred to above as the manifest indications of their vitality. . . . The next experiment was designed to ascertain the proportion of quinine necessary to arrest their power of spontaneous movement. . . . The next point was to determine whether the motionless state induced by a slightly-increased dose of quinine was one of real or apparent death. . . .

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[1] "The Action of Cinchona Alkaloids and some of their Congeners on Bacteria and Colorless Blood-Corpuscles."

"As soon as microzymes are liberated from the inhibitory influence of the quinine, they resume their vital properties and multiply almost as rapidly as usual.

"Distinguishing between a temporary and a permanent arrest of function, between a state of torpor and one of death, we are brought to the conclusion that quinine, in sufficient proportions, exerts an inhibitory, not a lethal influence on microzymes. Its action is analogous to that of a temperature of 60° C., not to that of a temperature of 100° C., or it may be compared with the torpor induced by the deprivation of oxygen. . . . Similar experiments, performed with smaller proportions of the quinia salt, showed that its inhibitory influence diminishes directly as the dose. . . . The toxic action of quinine on the colorless corpuscles of the blood was first noticed by Prof. Binz, and his observations have since been extended and corroborated by other investigators. This effect of the alkaloid acquires a special significance in view of recent doctrines of inflammation and suppuration; the emigration of leucocytes from the vessels into the inflamed tissue giving rise to the whole or a varying fraction of the total inflammatory exudation. Any substance capable of arresting or retarding the movements of the corpuscles might, therefore, be expected to arrest or retard the local consequences of tissue-irritation. And it is probable that the proliferative activity of the autochthonous corpuscular elements, depending as it does on properties common to them with the white corpuscles of the blood, may be restrained by the same means that are found effectual in checking the migratory propensities of the latter. That quinia really does possess such antiphlogistic powers is shown on the one hand by the clinical experience of many years; on the other, by the fact that the migration of leucocytes into the exposed mesentery of the frog (Cohnheim's experiment) may be checked, or wholly arrested, by the introduction of a minute dose of quinia into the current of the circulation (Binz, *loco citato*, p. 37). The study of the effects produced by the alkaloid on the spontaneous movements of the blood-corpuscles, as seen on the stage of the microscope, does accordingly appear to shed a considerable light on one of its therapeutic applications. . . . The four cinchona alkaloids are able speedily to arrest the migratory movement of the colorless corpuscles of newt's blood in the proportion of one in fifteen hundred. . . . That the proportion of the alkaloid necessary to arrest the movement of the waxy protuberances is much larger than that which arrests migration and the putting forth of filamentous processes. And this would lead us to expect that it may be possible to check the migratory propensities of the colorless corpuscles while in the body, without impairing or permanently abolishing their vitality—that they may be narcotized, so to speak, without being killed."

Dr. Dalton, in his address before the New York Academy of Medicine, November 20, 1873,[1] lucidly condenses the proofs of existence of germ-causes for a large class of diseases, and the general interests of pathologists, and corresponding advance of knowledge, in this direction. The demonstrations appear to prove that, with a multiplicity of detailed differences in germs producing morbid conditions, there were but few distinct genera, and these controlled by a few parasiticidal drugs; from this we might infer that these few genera produced many diseases, varying with the condition of the system invaded, and that many of the germ-produced diseases will be consequently interchangeable—accounting for the long-noticed coincidence of such occurrences; and also that comparatively few remedies should cover a much larger number of diseases. In a monograph by Dr. Thomas C. Minor, of Cincinnati,[1] just issued from the press, being an investigation of the noticed connection between erysipelas and puerperal fever, with a patient collation and able generalizations of abundant statistics, it is shown that the two diseases prevailed as epidemics at the same time, in the same localities; that where an isolated death from puerperal fever was noticed outside of the infected districts, a corresponding death from erysipelas seemed invariably to be noted in the same locality; that infants die of erysipelas shortly after or before their mothers die of puerperal fever; that the two diseases prevail together throughout all the States; that any marked increase, in any one locality, of the one disease, seems to be accompanied by a corresponding increase of the other. These facts were obtained from Dr. Minor's researches in the United States Census records of 1870, in which he finds 3,162 deaths from erysipelas and 1,828 fatal cases of puerperal fever, no general epidemic of either disease having prevailed that year, although the greatest mortality of both diseases was in the month of March. He also states the number of cases and mortality of erysipelas in the Federal army during the late civil war, from statistics obtained from the Army Medical Records, indicating how extensive was the disease, and how important it is that we should study its nature and treatment. In an army which averaged 532,000 men, there were during the war 24,812 cases of erysipelas, 2,107 of which proved fatal—and presumably under the accepted treatment. Assuming Dr. Minor to be correct, then, in accordance with the theory I suggest, the treatment for erysipelas should be fairly proposed in puerperal fever; and, in case of success, would be an additional crucial test both of the correctness of my erysipelas treatment and of Dr. Minor's proposition.

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[1] "The Origin and Propagation of Disease," by John C. Dalton, M. D.

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[1] "Erysipelas and Childbed Fever," by Thomas C. Minor, M.D.

ART. III.—*The Polar Action of Electricity in Physiology.*

By JOHN J. MASON, M. D., New York.

Is polar influence, as distinguished from that of current-direction, the sole cause of the well-known physiological effects of electricity on the nervous system?

Restricting ourselves to the force called electricity, in a condition of low tension, we shall claim in this article to show good reasons why this question ought to be answered affirmatively. In reality, the discussion concerns only the mode of action of mild currents or discharges, so that we have nothing to do with the more powerful manifestations of this force; the latter act as does lightning, by causing a violent mechanical commotion in the tissues. When their tension is sufficiently reduced, however, we have phenomena attending their action upon the nervous structures, which depend either upon current direction or polar action. That they are due to the latter, is denied by prominent observers in France, while the recent writings of Radcliffe, Hitzig, and others, appear to do little toward solving the question at issue.

Fortunately, we can dispense with the usual history of the subject from Volta down to the present time; still, a statement of the most prominent facts and theories which bear upon this point is necessary, before any attempt is made to reconcile them with each other. The experiments and results obtained by the writer will then be explained.

In 1859, a memorable year to physiologists, M. A. Chauveau, of Lyons, published, in the *Journal de la Physiologie*, three memoirs, entitled "Théorie des Effets Physiologiques produits par l'Électricité transmise dans l'Organisme Animal." Apparently not aware of what was being done in Germany, he claimed to have demonstrated, by a long series of experiments, the fact that all forms of electric currents produce their maximum of physiological effect at their point of exit from the animal part of the circuit; i. e., at the negative pole or cathode. The first memoir treated of the action of induction-shocks; the second compared this action with that of static discharges, and that caused by closing and opening a voltaic current; the third memoir consisted of a critical examination of facts and theories published prior to his own.

Exhaustive and satisfactory as were these memoirs, they soon became almost forgotten beside the brilliant results obtained and theory deduced from them, at the same date, by Eduard Pflüger, of Bohn. This observer, by his well-known researches, to which, in general excellence, one can hardly find a parallel in physiological science, first established the fact that a voltaic current, during its passage longitudinally through a frog's nerve, divides this structure into two distinct zones. These zones he called electrotonic. Anelectrotonic and cathelectrotonic, because the first was found to exist near the anode or positive pole, and the second in the region of the negative pole or cathode.

He discovered that, in the region of the anode, the irritability of the nerve was diminished, while it was increased in the neighborhood of the cathode. He found, also, that these zones extended both beyond and within that portion of the nerve included between the electrodes, and that they were divided by a neutral point, at which there existed a normal degree of irritability. By using the rheochord of Du Bois-Reymond, he was enabled to graduate the intensity of his currents with great precision, and thus to establish his new contraction-laws, which have remained unaltered to this day. He exposed the errors of previous experiments made without allowance for current-intensity, and gave out an original theory by which, he claimed, the laws of contraction could be satisfactorily explained.

Before attempting to give the application of this theory, let us understand what is meant by the term electrotonus. Faraday discovered that, when a metallic wire was under the influence of induction, an obstacle existed to the formation of an electric current in its substance. This condition of the wire he called electrotonus, from *ἤλεκτρον* and *τόνος* (electric tension), and considered that it was due to a change in the polar arrangement of the ultimate particles of the metallic mass.

When Du Bois-Reymond found that a voltaic current caused the same sort of inhibitory effect in the animal current of a frog's nerve, he naturally made use of the same expression, regarding both phenomena as alike explainable by the aid of the molecular hypothesis, assuming that the molecules of the nerve had been subjected to a change in their polarity.

Pflüger used the word electrotonus in the same general sense as did Du Bois-Reymond, and endeavored to explain the contraction-laws as depending upon different phases of molecular tension. His laws are the following:

1. The mildest currents applied to the nerve cause contraction only on closing the circuit, independently of direction.

2. Currents of medium strength cause contraction both at closing and opening in both directions.

3. Strong descending currents cause contraction only at closing the circuit, while strong ascending currents cause it only at opening.

No one denies the accuracy of these laws. They may be readily verified on the fresh nerve. His explanation is as follows:

We have seen that the peculiar condition which he discovered near the anode he called anelectrotonus; that near the cathode, cathelectrotonus. Then he found that both strong anelectrotonus and cathelectrotonus destroyed temporarily the conductivity of the nerve. He asserted, "The nerve is only stimulated by the appearance of cathelectrotonus, and by the disappearance of anelectrotonus," and, by the latter, he meant that, near the anode, the nerve suddenly returns to its normal condition of irritability on opening the circuit. This sudden return from a depressed state to one of normal vitality acts like an irritant to the nerve.

1. With the mildest currents, neither anelectrotonus nor cathelectrotonus is sufficiently pronounced to interfere with the conductivity of the nerve; anelectrotonus is too feeble to cause irritation by its disappearance, and the appearance of cathelectrotonus alone acts. Hence we have only closing contractions.

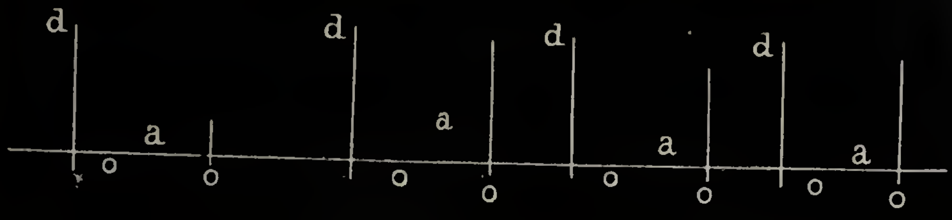
2. With currents of medium strength, anelectrotonus acquires sufficient intensity to cause irritation by its disappearance, but neither this condition nor its opposite is enough to destroy nerve-conductivity. Hence we have contractions both at closing and opening, and in both directions.

3. With strong currents, both anelectrotonus and catheleetrotonus are intense enough to destroy nerve-conductivity, and hence the irritation can only be propagated to the muscle when the descending current is closed and the ascending current opened.

The well-known experiments of Matteucci on electrolytic decomposition in moistened threads, etc., threatened at first to exclude electrotonus from electro-physiology. "All the phenomena observed by Pflüger belong to electrolysis" was asserted; but, however plausible this idea may have appeared to some as a simple explanation of what takes place during the passage of the current, no one to-day can for a moment employ it to account for the contraction-laws. This would imply a belief in an instantaneous succession of acid and alkali formations at the poles, here increasing, there diminishing irritability, by appearing and vanishing alternately.

Chauveau observed the remarkable effect produced by opening the circuit, when the anode had been acting upon the trunk of the facial nerve, and explained it by supposing that a secondary current or discharge was set up on breaking the circuit, and which produced irritation, like the primary voltaic current, only at its point of exit from the tissues.

Legros and Onimus have given a very plausible explanation of Pflüger's laws. On the 21st of March last, before the Society of Biology in Paris, Onimus, in presenting a new apparatus for generating powerful currents of polarization, made the following statement: "After having electrized a nerve with a descending current, as soon as we open the circuit, an ascending current passes, which exerts an influence often more considerable than the descending current, and contraction follows. It is thus that most of the laws established by Du Bois-Reymond, Pflüger, Cyon, and the German school, are to be explained. Most of the phenomena called anelectrotonic are only the result of electrolytic action and irritation due to the formation of currents of polarization. . . . Now, if excitation of a nerve only provokes contraction at closing a descending current and at opening one passed in an ascending direction, the latter is due not, as they have said, to the disappearance of anelectrotonus, but to the action of a current of polarization in a descend-



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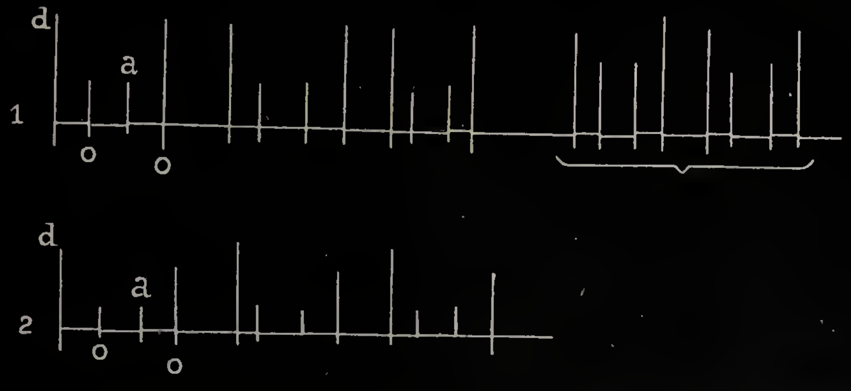

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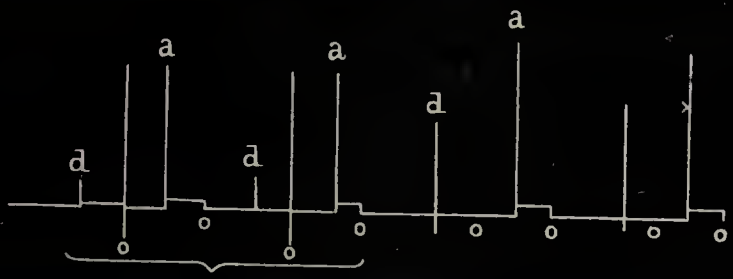

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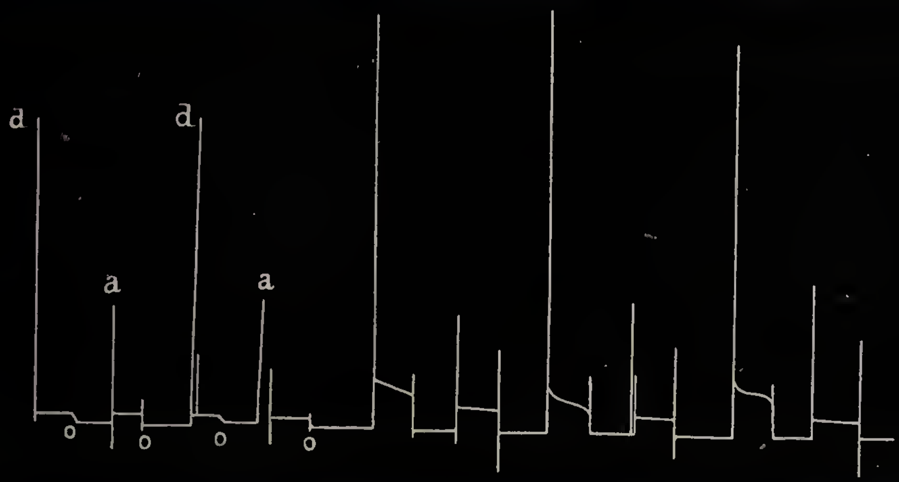

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ing direction;" i. e., the direction in which it is supposed more readily to affect the motor nerve. With the advocates of this theory, it is the direction of a current which stimulates, and not polar action. Radcliffe's views are the same, except that he speaks of these secondary currents as static discharges. Chauveau, it has been seen, recognized these currents, but held that direction had nothing to do with their effect, except in so far as it determined the location of the point of exit.[1]

I had repeated the greater part of Pflüger's experiments as early as 1870, when a simple way occurred to me of showing polar action to a medical class. A scheme of this method is represented in the sketch (*see* Frontispiece), together with a series of tracings obtained in the myographium of Pflüger, and copied with great care from photographs taken from the smoked-glass plates used as negatives. All forms of electricity were tried —the voltaic current from a variety of cells, large and small, single opening and closing induction-shocks from Du Bois-Reymond's electro-motor, and static discharges or currents from a Holtz machine. Current intensity was regulated in some cases by using the rheochord, and in others the rheostat of Siemens. The gastrocnemius muscle, when used, was prepared as shown by the sketch, the lines leading from the muscle and bone denoting fine platinum wires, which were attached by looping them carefully around the parts. The sartorius muscle was fastened to the myographium support *M*, by its pelvic attachment, the scale-pan hanging from its tibial extremity. The unpolarizable electrodes of Du Bois-Reymond, when used, caused no change in the character of the tracings obtained by closing the circuit. Two gyrotropes of Pohl, 1 and 2, served (1) to change the direction of currents, and (2) to alter the position of the electrodes from *G* to *F* when desired. The nerve-bundles which are distributed to the gastrocnemius from the sciatic are of course more numerous near the upper portion of the muscle than lower down near the tendo Achillis. In the sartorius, they are more numerous at the lower portion of its middle third. These regions are far more irritable than any others, a fact first shown by Kühne, and easily demonstrated by the application of chemical or mechanical stimulants to the parts in question. A current from a single cell of Daniel, passed through the gastrocnemius (*see* cut) in an ascending direction, gives a trace in the myographium more than twice as high as that produced by a descending current from the same cell (*see* tracings 1 and 2). In the gastrocnemius of a frog thoroughly under the influence of woorara, however, the direction of the current has no specific effect. This fact is shown in tracing 7, where the lines are seen to be nearly of the same height. Heidenhain first noted this action of the current in woorarized muscles, and, in spite of the objections of Von Bezold, I can see no reason for rejecting it as a physiological fact. The latter observer claims that it is necessary, in these experiments, to separate the part of the muscle which contracts from that which is stimulated. As no good reason is given *why it is necessary*, and as fixing a muscle at its middle in clamps introduces another source of error far graver than the one referred to, the justice of this criticism does not fully appear.

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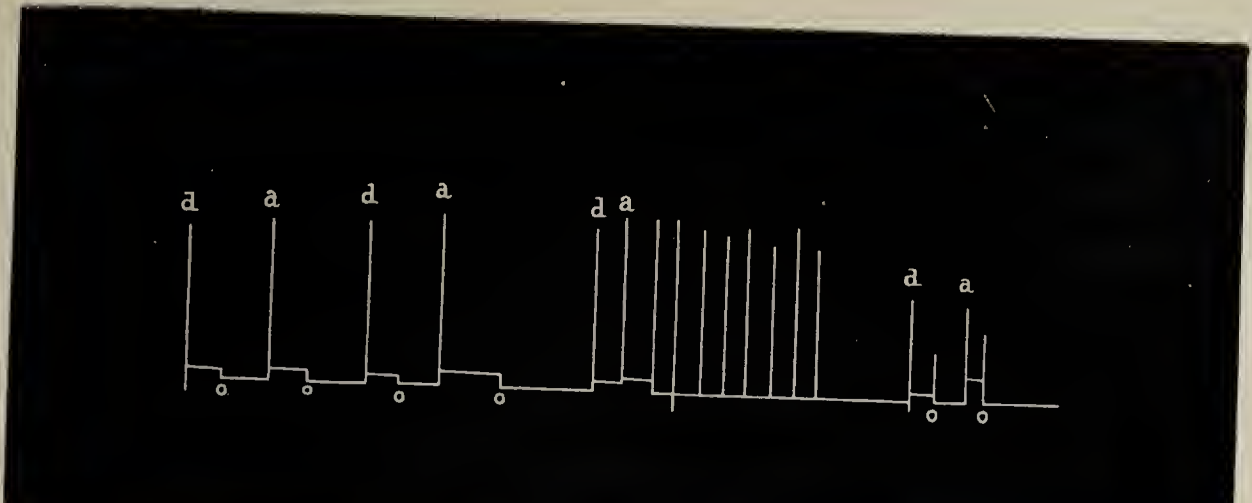
[1] Hitzig's articles, which have appeared in Westphal's "Archiv," 1873, and Pflüger's "Archiv," of the same year, relate chiefly to the application of the polar method therapeutically. They have been well answered by Erb and Filhene. (*See* Erb, *Sammlung klinische Vorträge*, No. 46, and Pflüger's "Archiv," 1873, vol. viii., p. 71.)

EXPLANATION OF TRACINGS.

In all (*d*) denotes the amount of contraction caused by closing a descending current; i. e., one passing from the myographium-clamp *M* toward the scale-pan, as represented by the arrows in the sketch; (*a*) denotes the amount of contraction caused by closing an ascending current; (*o*) denotes the amount of contraction caused by opening the current closed just before, except in tracing 8, where (*o*) denotes the effect of opening induction-shocks. When using the voltaic current, the following order was preserved for the sake of clearness: (*d*) (*o*) (*a*) (*o*); i. e. (closing descending), (opening descending), (closing ascending), (opening ascending), forming thus several groups of four lines each.

Tracing 1.—Electrodes comprise the gastrocnemius muscle in the circuit of four very small elements of Daniel, with ten units of resistance as an accessory circuit. The current was



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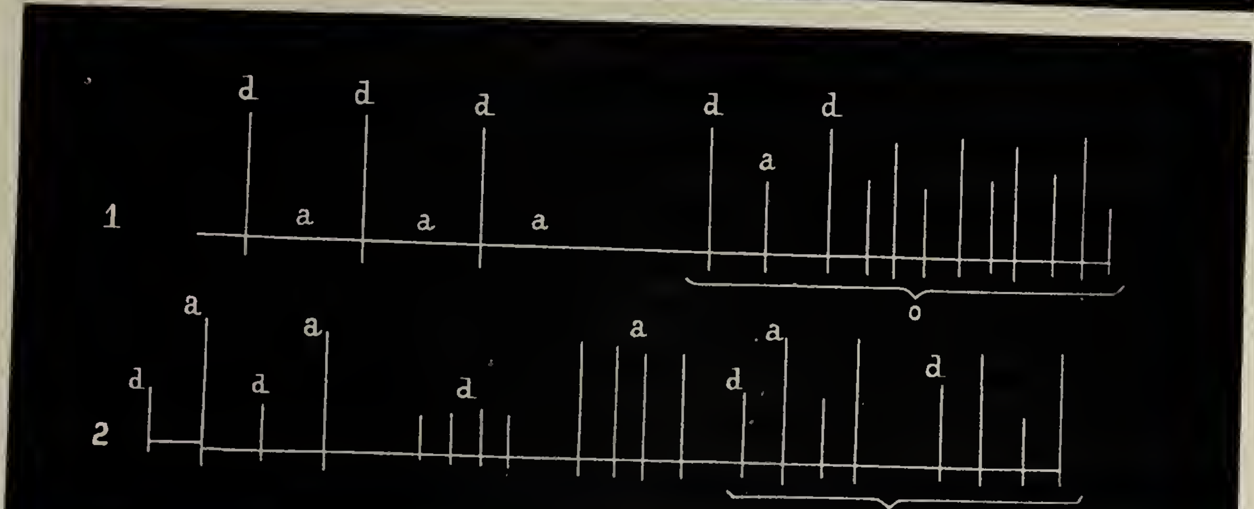

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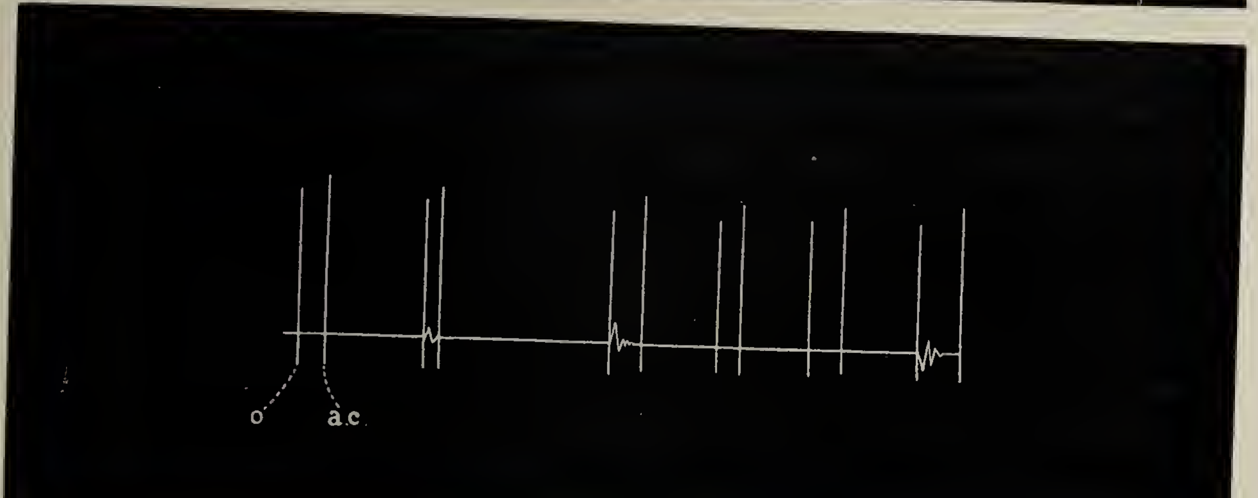

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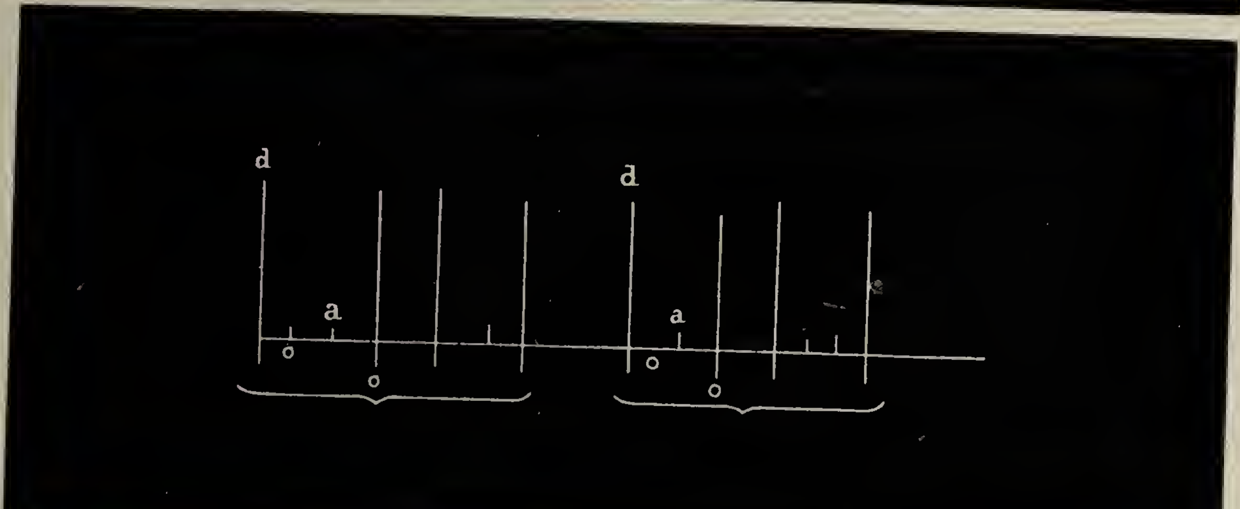

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opened by means of a metallic arc suddenly connecting the electrodes transversely.

Tracing 2.—The same as tracing 1, except that ten more resistances were used.

Tracing 3.—Electrodes in position *F*, so as to comprise the bone and upper end of the nerves in a circuit of two elements.

Tracing 4.—The same as tracing 3, except that more elements were used.

Tracing 5.—Shows different effects of the two methods of opening the circuit. Electrodes in position *G*. Current about the same as in tracing 1. First two groups, opening contraction caused by connecting electrodes transversely. Last two groups, circuit opened by disconnecting a single wire.

Tracing 6.—Sartorius muscle of a large frog. One electrode (upper) embraced the pelvic attachment of the muscle, and the other (lower) was placed around the muscle near the entrance of its nerves. First two groups, current consisted of four elements of Daniel, with ten resistances. Last three groups, current-intensity slightly increased.

Tracing 7.—Shows the relative height of contractions of the gastrocnemius muscle of a woorarized frog, irritated by currents in both directions. Electrodes in position *G*. The ordinates drawn by shortening of the muscle, under the influence of currents passed in both directions, are here seen to be practically equal.

Tracing 8.—Contractions caused by the action of currents induced in the second spiral of Du Bois-Reymond's apparatus, by *closing* the voltaic circuit. Electrodes in position *F*. Tracings in bracket (*o*), same line, caused by the passage of currents, induced on *opening* the voltaic circuit. Lower series. Electrodes in position *G*—(*o*) represents opening shocks; the rest are closing; (*a*) and (*d*) denote direction as before.

Tracing 9.—Six pairs of lines drawn as follows: The first of each pair caused by opening a strong voltaic current which had been allowed to pass for one second through the sciatic nerve in an ascending direction; the second line of each pair caused by connecting the electrodes transversely between the nerve and the battery, immediately after opening the battery-circuit, thus allowing the secondary current to pass. The electrodes were platinum wires, and hence these secondary currents were due to polarization of the electrodes.

Tracing 10.—Third phase of Pflüger's contraction-laws. Strong voltaic current applied to the sciatic nerve. Gastrocnemius inclosed in small silver cylinder, filled with water and connected to the earth by a wire. All the parts of the apparatus insulated by glass. In obtaining the first two groups, the earth-wire was closed; in the last two groups, the earth-wire was open.

The effect of static currents or discharges from a Holtz machine was identical with that caused by induction-currents. Here, as in the latter case, the characteristic action of shocks passed in the two directions was lost whenever tension was sufficiently increased. This is also the case with voltaic currents from twenty to thirty cells joined for tension. However we may explain them, it is at least certain that the above results correspond to invariable laws, and represent a constant series of phenomena to be produced at will, with the muscles of frogs and warm-blooded animals. It also seems to me equally certain that mild electric currents irritate only at their point of exit from the tissues, and not by an effect produced all along the nerve, due to the direction in which they are passed. In the treatise on "Medical Electricity" by Onimus and Legros, published in 1872, p. 231, we read: "The direct current, then, acts on muscular contraction more energetically than the inverse current; i. e., when applied to the nerve. This law explains why in Marianini's experiment, in which the current is made to pass from one arm to the other, the contraction is more pronounced in the arm in contact with the negative pole. In fact, it is in this member that the current is direct. The same reason explains most of the facts observed by Chauveau. This physiologist has wished to establish a law that the electric current acts only at its point of exit; that is to say, near the negative pole; still, in this case there ought to be nerve-filaments, which are traversed by the direct current, which evidently determines stronger contraction in the muscles situated near the negative pole. We can conclude that the direct or descending current is the one which acts with the most energy on the motor nerve." Chauveau's experiments were made mostly on the facial nerve of the horse, *in situ*. In my own experiments, in which the parts were separated from the body in all cases, the following sources of error were eliminated: 1. The action of derived currents; 2. Reflex action; 3. The chance of error as to the amount of contraction obtained in all cases, eliminated by the use of the myographium.[1] The criticism quoted cannot, therefore, apply to the present case.

How explain the contractions which follow the opening of the circuit? Tracing No. 5 gives us a key to the question. Here we have two groups of lines, the first showing no opening contractions; the second the same as in the preceding cuts. With the first group in bracket opening was effected by simple interruption at a single point in one of the conducting wires. With the second group, opening was effected by connecting transversely both conducting wires by a metallic arc placed in mercury-cups between the battery and the muscle. In the former case, anelectrotonus was caused to disappear just as effectually as in the latter, but no opening contractions were induced. The disappearance of the positive pole, therefore, is no irritant here, however much it may act when applied directly to a nerve. It is impossible to escape the explanation which forces itself upon us. These opening contractions are due to the passage of secondary currents caused by polarization of the electrodes, and it seems to me of little consequence whether we call them currents or discharges, since both, when mild, irritate only at their point of exit, for both are in reality similar manifestations of the same force. In case of interruption of the circuit by severing one of the conducting wires, these secondary currents cannot pass, for they have no path to follow. When we open by closing an accessory circuit to the muscle, they can pass, and, when we study their effects upon the galvanometer or the frog, we find that they act very much as do mild voltaic currents; i. e., only at their point of exit from the tissues, and not by their direction. Can this manner of interpreting what is observed where a muscle is directly stimulated, serve to account for the contraction-laws of Pflüger? A simple experiment, the results of which are shown in tracing 9, is at least of interest in this connection. A series of ordinates is obtained in pairs. The first of each pair represents the contraction due to opening a voltaic current (ascending), the electrodes being applied directly to the sciatic nerve separated from the body. The second of each pair represents a contraction due to closing an accessory circuit to the nerve immediately after opening the voltaic circuit. The strength of current employed was just sufficient to cause the third phase of Pflüger's laws, and was allowed to pass during one second. Here, evidently, there seems to be something beside the disappearance of the positive pole, which causes opening contractions. This something is, beyond doubt, a secondary current, due simply to the polarization of the electrodes, and not polarization of the parts. Platinum wires were used in this case, but, when the unpolarizable electrodes of Du Bois-Reymond were used, the first line of the pairs was alone obtained.

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[1] It is due to Prof. Chauveau, that I should state here what I have learned through his courtesy. He has often confirmed his researches on parts separated from the body, chiefly in his laboratory, by way of demonstration, but nothing has been written on this subject. It is a pleasant privilege to be able thus to confirm the opinions which he published over twenty years ago, and which he holds against views more advanced, but far less satisfactory.

Much stress is laid upon the following experiment, by the advocates of the all-sufficient efficacy of currents of polarization to explain all the results obtained by the "German school."

Both hands of the observer are plunged into two vessels of distilled water, in each of which the respective poles of a voltaic battery are immersed. After allowing the current to pass for a few seconds, the hands are withdrawn and plunged into two other vessels of distilled water, connected with a galvanometer. The needle shows at once a deflection of 30 to 40 degrees.

Now, the only law that can be made from this experiment is a well-known one, that secondary currents of polarization are formed whenever the electrodes are polarizable. If, instead of distilled water, vessels of amalgamated zinc, containing a saturated solution of the sulphate of zinc, had been used, no marked deflection would have been obtained. Water is the electrode in the first case, and becomes easily polarized. The latter combination is unpolarizable; its use is indispensable, as Pflüger has shown, when studying the effects which follow opening the circuit. We cannot, therefore, accept the theory which gives so much importance to the action of currents of polarization in physiology, and must continue to believe in the efficacy of the disappearance of the positive pole, in causing opening contractions. In regard to the view that the muscle acts like a Leyden jar, attention is called to tracing 10, where any free static electricity, which might have accumulated on the sheaths of the muscular fibres, according to Radcliffe, would be conducted off as fast as it was formed. With this arrangement of the experiment and with all the apparatus insulated, there is seen to be no alteration in the third phase of the contraction-laws. The groups are seen to be alike, whether the earth-wire were connected to the metallic cup of water in which the muscle was immersed, or not.

There is another subject which cannot fail to be of great interest to all, whatever may be its practical worth; I refer to the action of the voltaic current upon the vaso-motor nerves.

If we attach two small platinum wires, coming from a voltaic battery, one around the base and the other to the tip of a frog's tongue, the following effects will be noticed under the microscope:

If the current be made to pass from the tip toward the base, the circulation will be retarded, cease altogether with currents of sufficient strength, and single arterioles, brought under the field of the microscopic objective, will be seen to diminish greatly in calibre.

If, now, the current be passed from the base toward the tip, the effect upon the circulation is somewhat reversed. *The vessels are never narrowed by the descending current when not too strong.*

It will be noticed that the current which causes contraction by the arterioles is, *par excellence*, the ascending. These facts, or similar ones, have recently been made use of by those who believe in the influence of current-direction and deny that of the poles, as a strong argument in favor of their other theory of peristaltic arterial action. They claim that the descending current stimulates the vasal nerves, and hence increases the peristaltic action of the vessels. The ascending current, passing in a direction opposed to that in which nerve-stimulus is normally conveyed, stops peristaltic action, and hence retards the circulation. Now, just as in the preparation of the gastrocnemius, so in the tongue, by far the greater part of the nerve-fibres are at the upper portion of the organ, and all the vaso-motor nerves are here included by the wire, which, when it is made the negative pole, causes irritation of these nerves, and the circulation is retarded by narrowing of the arterioles. During the passage of the descending current, the same parts are under the depressing influence of the positive pole, and arterial tonicity is then enfeebled. This manner of reasoning seems more in accordance with the actual state of our knowledge, and renders unnecessary the assumption of peristaltic action, as well as the denial of specific polar influence.

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ART. IV.—*Clinical Ureametry.* By HENRY G. PIFFARD, M. D., Surgeon to the Charity Hospital, Clinical Professor of Dermatology, Medical Department of the New York University.

THE procedures most in vogue for the determination of the amount and proportion of urea present in specimens of urine or other fluids may be divided into two classes: 1. Those which can only be accomplished with the aid of extensive apparatus, and great expenditure of time and trouble, and which necessitate for their proper performance the possession of special technical knowledge; and, 2. Those which permit of a tolerably accurate result being attained with means within the reach of every medical practitioner.

To the procedures of the first class belong the methods of Bunsen, Grehant, Millon, and others; while to those of the second belong the processes of Davy, Liebig, Boymond, and one other, to which it is the object of this communication to draw attention.

The methods of Davy and Liebig have been before the public for many years, have been described by me elsewhere,[1] are referred to in almost every manual upon the subject, and hence need not be particularly dwelt upon at present. The method of Boymond, however, is not so well known, and may with propriety be here described, especially as the writer's method was suggested by it. Full details will be found in Boymond's work.[2]

The theory of this method depends upon decomposition of the urea by nitrous acid, and the determination of the amount of gases evolved during the decomposition and the deduction therefrom of the amount of urea which was necessary to produce the amount of gases observed.

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[1] "De l'Urée," Paris, 1872.

[2] "Guide to Urinary Analysis," Wm. Wood & Co., N. Y., 1873.

Boymond makes use of a modification of Millon's reagent, which appears to consist of nitrous acid dissolved in a solution of nitrite and nitrate of mercury. He obtains it by dissolving 125 grammes of mercury in 170 grammes of pure concentrated nitric acid, and, when the solution is effected, adds an equal volume of distilled water.

When this reagent is added to a solution of urea, decomposition of the urea occurs, with rapid evolution of nitrogen and carbonic acid. The weight of gas evolved, if unaccompanied with aqueous vapor, is found to stand in the relation of 12 parts of gas by weight to 10 parts of urea. Boymond's formula for this reaction, according to the old notation, is as follows:

$$C^2H^4N^2O^2 + NO^3 = NH^3 + HO + 2N + 2CO^2.$$

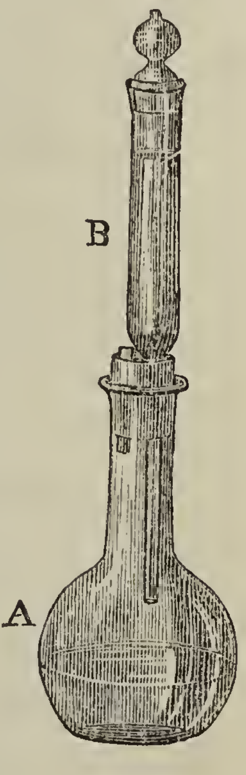
In manipulating this process, Boymond makes use of a decomposition-flask of peculiar construction, which consists of three parts—namely, one to contain the urine, and the others for the reception respectively of the reagent and of strong sulphuric acid. The urine, reagent, and sulphuric acid, being placed in their appropriate receptacles, the whole apparatus is weighed. After weighing, the reagent is permitted to mix with the urine, and the decomposition proceeds until all the urea has been exhausted. The gases, in escaping, pass through the sulphuric acid, and are thoroughly dried. Toward the end the decomposition is a little sluggish, and Boymond assists it by gently warming the flask over a sand-bath. When at last the mixture ceases to evolve gas, the apparatus is cooled and again weighed, the loss in weight bearing to the amount of urea present the proportion of 12 to 10.

Boymond has obtained by this method the following results: in five consecutive experiments, 200 milligrammes of urea, which should have given 240 milligrammes of loss, gave him 245, 235, 238, 242, and 244 milligrammes respectively. This degree of accuracy is greater, we believe, than can be assured by any other known procedure, and the process is one that is certainly to be commended to those willing to take the trouble to perform it carefully. The only objection that can be urged against it is the fact that Boymond's apparatus is fragile, and can with difficulty be obtained in this country; and the effort to perform the necessary manipulations with the ordinary decomposition-flasks obtainable here is attended with much inconvenience.

Having encountered the difficulties referred to, and yet desiring to avail myself of the principles of this process, I was led to certain experiments which resulted in the discovery of a method not quite so accurate, but much simpler and more convenient than the original.

The reagent I employed was obtained by dissolving one cubic centimetre of metallic mercury in 20 cc. of pure nitric acid, specific gravity 1.400. As soon as the mercury was completely dissolved, 20 cc. of distilled water was added. This gives a solution which will act upon urea with great energy. The apparatus made use of was one that can be arranged by any glass-blower at a trifling cost, and may be described as follows:

A is a small flask, holding about an ounce and a half, *B* is a glass-stoppered test-tube, with a small tube at its lower end passing through a perforated cork, which fits the mouth of the flask. The stoppered tube should hold about three fluid-drachms. The cork has still another perforation, in which a small piece of tube, open at both ends, is adjusted.



A remarkably fine specimen of pure urea from Merck was obtained, and a portion was dried for three hours in the water-oven, and then placed over sulphuric acid, and kept for twenty-four hours. This was done to free it from hygroscopic moisture. The flask *A* was then carefully cleaned and dried, and its weight ascertained. A little of the dried urea was then introduced into the flask, and the weight noted. This would insure greater accuracy in the weight of the urea than if a definite quantity of urea had first been weighed and then transferred to the flask. About 10 cc. of distilled water was added to carry the urea into solution, and a like quantity of the reagent was placed in the stoppered tube. The two pieces of apparatus were now joined, as shown in the cut, and the weight of the whole was taken. The flask was then removed from the balance, and the stopper temporarily removed from the tube, to permit its contents to descend and mix with the urea. The stopper was then replaced, and the flask set aside. The gas resulting from the mutual decomposition of the urea and the nitrous acid escaped through the small tube in the cork, carrying with it, of course, a small quantity of aqueous vapor. This decomposition, according to the modern notation, may be expressed as follows:

$$2(CH^4N^2O) + N^2O^3 = H^2O + 2H^3N + 2CO^2 + 4N;$$

from which it appears that both the urea and the nitrous acid are decomposed, and, of the products, *water* and *ammonia* remain in the flask, and *carbonic acid* and *nitrogen* escape.

Now, after a number of experiments, it was found that, if the apparatus was again weighed at the expiration of *fifty minutes* after mixing the reagent and the urea, the loss of weight sustained was *very nearly* equal to the weight of urea originally present.

Seven consecutive experiments—six made on one day, and one made the next day—gave the following results:

1st	experiment,	260	m'grammes of	urea	gave	260	m'g's	loss.
2d	"	176	"	"	"	175	"	"
3d	"	129	"	"	"	129	"	"
4th	"	221	"	"	"	231	"	"
5th	"	88	"	"	"	91	"	"
6th	"	89	"	"	"	90	"	"
7th	"	200	"	"	"	199	"	"

The above, reduced to percentages, gives—

1st	experiment	100.77
2d	"	99.43
3d	"	100
4th	"	104.52
5th	"	103.29
6th	"	101.12
7th	"	99.50
		7)708.63
		101.27

It will be seen that the average error is a fraction over one per cent., and that the extremes of error are about five per cent., a result which is much better than I have ever been able to obtain by either Davy's or Liebig's method. The temperature of the room during the period of these observations was between 60° and 70° Fahr. Subsequently, several analyses of the *same* specimen of urine were made, with the same *uniformity* of result.

I have employed this method during the past eighteen months, for the quantitative determination of urea in urine and other fluids, with perfect satisfaction.

For the analysis of urine, 10 cc., or, if English measures are employed, two fluid-drachms of urine, are carefully transferred to the flask. An equal volume of reagent is then placed in the test-tube, the two pieces of apparatus are joined and weighed. The fluids are then permitted to mix, and at the end of fifty minutes the weight of the flask and contents is again ascertained. The loss in weight is about one per cent. greater than the weight of urea in the quantity of urine under examination.

ART. V.—*Calomel in Pneumonia.* By W. P. MORGAN, M. D., Baltimore, Md.

MY attention has been particularly directed to the use of mercury in pneumonia by the fact of having been called to a case which was treated, by a practitioner of medicine, with calomel and opium, and in which ptyalism was all with which I had to contend.

The pneumonia was single, of the left lung, and at the time I was called (about the eighth day) had nearly disappeared, crepitation having returned to the lower lobe, the lowest portion of which was the only hepatized part remaining. The patient was, however, suffering from symptomatic fever caused by irritated bowels, sore gums, brassy taste, salivation, etc., the usual accompaniments of mercurial poisoning. The case reminded me much of the one reported a few years since by the editor of a Western journal, in which the practitioner first caused disease by prescribing mercury, and treated and ended both disease and patient with the same drug.

Being placed next on the list to bloodletting among the remedies for pneumonia, it has been generally used by those who favor antiphlogistics, more especially as they have been restricted in the use of bleeding by popular feeling.

Four-fifths of the physicians of twenty years' standing treat all inflammations by antiphlogistics, and I have known one, of thirty years' standing, bleed in chronic diarrhœa, a boldness of practice truly amazing. There was no chance left to try calomel in that case, a fact my worthy friend much regretted.

The practice of most of our physicians has been founded on studies of Copeland, Wood, and Watson. The first book upon practice put in my hands was Watson, and I do not know if, take it all in all, I could have been started upon a better track. Wood's practice was the next, and there for a time I stopped. From these to Todd and Bennett was a wide step which I have never been able entirely to bridge over, especially when calomel was discussed. In order to satisfy myself fully with regard to its merits, and the position it holds in the opinion of others, I have brought together paragraphs from the writings of such standard authors as happen to be in my library. In doing so, I find the older the author the more decided he is in recommending the use of mercury. Thus, Copeland (American edition, 1855), treatment of sthenic pneumonia, (vol. ii., p. 893) writes: "I have for many years directed, immediately after the bloodletting, from five to fifteen or twenty grains of calomel, with from three to five of James's powder, and from one to three of opium, to be taken at one dose."

Page 894: "Mercury with opium, in large doses, has been much employed, and calomel in doses of from five to twenty grains is the preparation which is most to be preferred. Should be persisted in until the gums are affected, or the disease arrested. In children very generally, and in adults not infrequently, the disease will be either much mitigated or altogether arrested before the effect upon the mouth is produced by the mercury.

"The great advantages of this treatment are its influence in lowering local and general vascular excitement, in relaxing the cutaneous surface, and equalizing the circulation; in preventing the effusion of lymph, and in promoting the absorption of whatever may have been already effused."

Page 895.—In the third stage, the second of Laennec: "The chief dependence should be placed upon calomel and opium."

He is closely followed by Wood (fifth edition, 1858, vol. ii., p. 25): "The combination of calomel, opium, and ipecacuanha, before given (in first stage) only at night, may now be continued through the day, in smaller doses, repeated at short intervals. When the symptoms are threatening, and speedy mercurial impression is requisite, three or four grains of calomel with half a grain or a grain of opium may be given every four hours.

"It is important to push the mercurial plan until the gums become somewhat affected, when the symptoms will generally begin to improve."

The next is not so confident; the influence of calomel is evidently on the wane.

Watson (American edition, 1858, p. 635): "When the inflammation has reached the second stage, that of solidification, mercury is more worthy of confidence, in my opinion, than tartarized antimony—the object of giving it is to make the gums tender; and it is expedient to do this as speedily as may be (by small doses of calomel and opium). Many persons, I am persuaded, are saved by treatment of this kind, pushed to slight ptyalism."

The foregoing authors are the standards who favor the old *régime*. The next I shall quote is Todd, whose clinical lectures (1860) show a passage from the old to the new method of treatment. In a list of cases (p. 277, American edition, acute diseases), seventy-eight in number, extending over the period embraced by the years 1840 to 1859, he arranges the cases into two classes; those treated by the reducing treatment, from 1840 to 1847, and those by supporting treatment, 1847 to 1859. The first, numbering twenty-five, were treated by bleeding, blistering, antimony, and mercury, with a loss of four, or about one in six. In the second the number of cases was fifty-three, and in these there were only six deaths, or about one in nine. This leads us to the opposite side of the question, and I quote.

Bennet (American edition, 1860, p. 276): "As to mercurials, the confident belief in their power of causing absorption of lymph, by operating on the blood, is not only opposed to sound theory, as formerly explained, but, like bloodletting, is not supported by that experience which has been so confidently appealed to in their favor."

Page 636, in comments on a case of pneumonia treated by mercurials prior to entering his hospital: "On the other hand, the unpleasant effects produced by the mercury, the severe swelling of the tongue, soreness of the gums, and profuse salivation, must not only be regarded as so many increased evils and unnecessary symptoms superadded to the original disease, but as being the cause of prolonging the convalescence."

My own case was very similar to this one, and I have no doubt that hundreds of others could testify to the poisoning by mercury, which happily is not so common as it once was. The next witness is Flint (edition of 1866, p. 166): "With our present knowledge of the course of the disease in cases in which no active measures of treatment are employed, and after a large experience of the value of tartar-emetic as a sorbefacient, its utility in this way is, to say the least, doubtful. The same remarks are applicable to mercury given with a view to affect the system. I have now for many years ceased to employ these remedies for the purpose under consideration, and have seen no reason to be dissatisfied with discontinuing their use."

These two discourage the use of mercury *in toto*, but the author of the "Science of Medicine" makes a show of a stand for it (*vide* Aitken, American edition, 1868, vol. ii., p. 756): "A combination of antimony and calomel is believed to have saved a much larger number of cases than antimony alone; a quarter of a grain to a grain of the tartrate of antimony, combined with one grain of calomel, given every four or every six hours, according to the severity of the disease, is the treatment in some cases to be adopted. Previous to its use the bowels should be well cleared out, and after the mercurial effects are indicated by the condition of the gums the further administration of the remedy should cease. In cases of simple serous pneumonia, even simpler remedies are sufficient.

"The efficacy of mercury, in the experience of Dr. Fuller, is most conspicuous in those cases of pneumonia in which tartar-emetic is of least avail." After this, condemnation results, and the following authors express themselves very decidedly against the use of calomel. Chambers, "Renewal of Life," p. 249: "I am afraid I must equally condemn antimony and mercury, medicines formerly often administered in pneumonia;" and Tanner (American edition, 1870, p. 558): "Bleeding, tartar-emetic, and mercury, are the agents on which we have been mainly taught to rely: but these remedies will, I feel convinced, do much more harm than good if applied to the treatment of inflammation of the lungs in the present day;" as also Fox in "System of Medicine," 1871, vol. iii., p. 698: "Calomel, with or without opium in combination, has also fallen into disuse, probably not without reason; experience has gradually demonstrated the minor degree of power which it was at one time supposed to possess in aiding the absorption of exudations, and no valid proof has been afforded that the duration of pneumonia has been shortened by its use;" and the latest author of a work on the practice of medicine (Roberts, American edition, 1874) has had no experience with mercury in cases of pneumonia.

Thus we see the evidence is strongly against the use of mercury; and when we take into consideration that the use of it originated in England, and that English-speaking physicians have been those who have most used it and are now abandoning it, it stands to reason that the sooner it is entirely laid aside, the better for humanity. I quote the following from Continental writers, to show the estimate they have formed of calomel.

Valleix, edition of 1866, tome ii., p. 657, says: "England is the country where calomel is most used," and is undetermined with regard to its use.

Trousseau, English edition, 1869, vol. ii., p. 571, speaking of the use of mercury, says: "So far, indeed, am I from denying the constitutional action of this medicine, that I have a great dread of it; and I believe that the topical action is that alone which is of use." So much for the French, and now for the Germans. Niemeyer, American edition, 1869, vol. i., does not mention mercury in connection with pneumonia. One thing has, I think, caused calomel to be more generally used than most remedies, viz., its sensible effects. In the times of bloodletting, the laymen judged physicians by the amount of blood drawn. They gazed in amazement at pound after pound as it fell into the basin, and the physician was urged on to more striking efforts; for what else could have induced Armstrong, Mackintosh, and others, to draw seventy and eighty ounces daily? So, when popular acclaim demanded that something be done with medicine, calomel took the front rank, because its results were evident. With what profound wisdom went forth the edict, "You must be salivated!" and with what mystery went from one to the other, "The doctor had to salivate him, and he is very low!" Well, the doctor was "doing something," and let us suppose it all right, but, as the evidence is so strongly against the use of calomel in pneumonia, let us now discard it totally.

Clinical Records from Private and Hospital Practice.

I.—*Report of the Surgical Cases treated in the St. John's Riverside Hospital, Yonkers, N. Y., during the Year* 1873 (*Fourth Year*). By J. H. Pooley, M. D.

There have been under my care in this hospital, during the year 1873, sixty-eight surgical cases, a larger number than in any previous year, showing that the advantages of the hospital are more and more appreciated, not only by the inhabitants of Yonkers, but also by most of the neighboring towns and villages.

The increase in the surgical practice of the hospital, though not rapid, has been continuous, as shown by the following figures. In 1870 there were 25 patients; in 1871 there were 58; in 1872 there were 63; and in 1873, 68.

These cases have been divided as follows, viz.:

Fractures of all kinds (not including those of the cranium)	11
Incised wounds	6
Railroad accidents	5
Abscess, in various situations	4
Contusion, and contused wounds	4
Ulcers	3
Fracture of cranium	3
Lacerated wounds	3
Suppuration of mastoid cells	2
Frost-bite	2
Arthritis of the knee	2
Diseases of the eye	2
Syphilis	2
Orchitis	2
Gunshot-wounds	2
Burns and scalds	2
Bursitis	1
Hernia	1
Injury of knee, with laceration of ligamentum patellæ	1
Varicose veins	1
Erysipelas (ambulans)	1
Stone in the bladder	1
Foreign body in the trachea	1
Hypertrophy of the nose	1
Aneurism	1
Vesico-vaginal fistula	1
Tetanus, traumatic	1
Dislocation of humerus and clavicle	1
Stricture of urethra	1
Total	68

Of these 68 cases there have been—

Discharged, cured	50
" improved	4
Died in hospital	10
Remaining at the end of the year	4
Total	68

The operations performed this year, exclusive of those of minor importance, have been nine in number, as follows:

Tracheotomy	2
Lithotomy, median	1
Circumcision	1
Trephining mastoid cells	1
Amputation of foot. Hey's	2
" thigh	1
" leg	1
Total	9

These have all been successful except the two operations of tracheotomy: in one of these, included in this report, a foreign body was impacted in the trachea, and could not be removed; the other, where death occurred from the rupture of an undiscovered aneurism, will be found in this JOURNAL for May, 1874.

The more important and interesting of the cases I will relate without classification, simply taking them up in the order in which they occur in the hospital case-book.

CASE I.—*Severe Injury of the Knee; Suppuration; Pyæmia, and Death.*—Ellen W——, aged twenty-one, native of Ireland, admitted February 9th. This girl, a servant in a family residing in Yonkers, met with her accident in the following manner: The day was a very windy one, and she, a very large, heavy person, was running into the house from the back yard along a flagged walk which terminated in a stone step about two feet high; just as she reached this step, she either entangled her legs in her skirts, the wind blowing fiercely in her face at the time, or tripped on some ice, and struck her knee, bent at a right angle, with all the force that her weight and rapid motion could give, directly upon the sharp edge of this stone step. She was carried into the house, and I was immediately sent for to see her. Finding the case to be one of great gravity and danger, I advised her removal to the hospital, which was done at once.

Upon examination, the following state of things was found: In front of the right knee was a transverse, ragged, irregularly elliptical wound four inches in length, which corresponded, when the limb was straight, to the upper edge of the patella. The patella was not fractured, but its upper border was completely torn from the ligamentum patellæ, to which adhered numerous minute portions of bone, showing the force to have been an avulsive one; it was, as said, torn, not cut.

The fingers could be freely and easily introduced into the joint, which did not seem to have sustained any other injury. The wound did not bleed much; there was a free discharge of synovia; the patient was rather faint, and decidedly hysterical. This patient was one of the worst possible subjects for a severe injury; she was tall, for a woman, and very fat, soft, succulent, flabby, and fibreless; hair red; eyes light; skin red and white, like a wax-doll; disposition dull and spiritless: when informed of the serious nature of her injury, she seemed to receive it as a sentence of death, and yet with perfect apathy. Of course, nothing but the worst of consequences could be expected from a grave surgical injury in such a subject; and they were not long in making themselves apparent.

The wound, after being carefully cleansed, was loosely brought together with a few points of interrupted suture, the limb laid out straight, and a large India-rubber bag, filled with powdered ice, laid over the knee, and an anodyne ordered for the night. She had an hysterical paroxysm during the night, for which the house-surgeon made a suitable prescription. The next morning I found her in a comfortable condition, free from pain, scarcely any inflammatory reaction in the knee, skin cool, pulse 120. Ordered cold to be continued, and, as she had no appetite, milk and beef-tea to be administered, with any cooling drink she preferred; she asked for lemonade, which was allowed. During the first week she remained in very much the same condition, fever rather high, her pulse was pretty uniformly at 120, and her temperature 103°; she did not complain of much pain in the wound, which, together with the knee-joint, was remarkably free from heat, swelling, or redness; there is but slight purulent discharge. She lies in a listless, apathetic condition; her tongue is clean, but she takes no solid food whatever.

She takes an anodyne at night, and generally sleeps well, but is occasionally hysterical. Though no reason can be assigned for it, she passes her urine in bed most of the time, not even asking for the bedpan.

19*th.*—Condition of the patient much the same, except that she has evening fever; she lies in the same lethargic condition, and has taken as yet no solid food; she now refuses beef-tea, and takes nothing but milk-punch; she was ordered quiniæ sul., grs. v, three times a day. The stitches had been removed from the wound some days before; it is discharging more freely a thick, curdy pus, without odor; she complains of no pain in the knee except when moved. To-day, my attention was first called to a large bed-sore, which the nurse had noticed a day or two before on her left buttock; it was already as large as the hand, and the integument was in a state of slough. The ice-bag was kept on constantly for fifteen days; then it was kept on only part of the time for four days longer, the length of the application being diminished each day, when it was left off entirely.

A posterior splint was then applied, and retained by a plaster-of-Paris bandage, and a weak, cold solution of carbolic acid applied to the wound, which was left exposed. She was now ordered to lie a considerable part of the time on her right side, to avoid pressure on the bed-sore; this soon led to an abrasion over the right trochanter, which, in spite of every care, became a deep slough; the upper part of the splint also, though carefully padded, gave rise to an abrasion; the skin of the heels also gave way; indeed, wherever the least pressure was brought to bear, there seemed to be no vitality to resist it, and a sore was threatened.

March 3d.—She had a chill; there was no change in the vital signs, which continued remarkably uniform, but she is emaciating, and evidently much weaker; she lives almost entirely on milk-punch. The knee is discharging freely, but, as it was thought that nevertheless there might be injurious retention of matter, a drainage-tube was introduced, which worked well. She was ordered free doses of tinct. ferri chloridi with her quinine.

7th.—Had a repetition of the chill, which was followed by prolonged and copious perspiration. Pyæmia was diagnosticated, and a corresponding prognosis expressed.

From this time she had a chill almost every day, sometimes several times a day; sweats profusely, takes very little milk-punch, but a good deal of brandy-and-water.

Discharge from the knee more profuse and offensive; pus seems to be burrowing up under the muscles of the thigh; the bed-sores are spreading and fearfully offensive. As they extend through the adipose layer, it is a curious as well as a disgusting sight to see the oil dropping from them and floating in a thick, yellow pellicle on the top of the discharges. The care of this poor girl was from now and to her death a terrible task: we were obliged to remove all the other patients from the ward, and keep every window widely and constantly open. Notwithstanding this and the free use of carbolic acid, her immediate neighborhood was almost unbearable, and the nurses actually looked sick from their miserable task.

14th.—I was hastily summoned, as she was supposed to be dying. She lay in a state of apparent collapse, pale, and scarcely breathing, her face and forehead beaded with large drops of perspiration, and pulse scarcely perceptible; but she rallied from this condition and lived several days with frequent repetitions of these sinking turns. Her pulse varied frequently from 120 to 160 per minute, temperature constantly below normal, sometimes as low as 95°; she was part of the time delirious, and part of the time in a state of semi-coma, and for more than a week took nothing but brandy-and-water. She died March 23d.

No *post-mortem* examination was made, except of the leg. The structures of the knee-joint were completely disorganized, and its cavity filled with offensive pus; there was also a large collection of the same offensive matter both above and below the knee.

This poor girl's most wretched case affords material for much painful reflection. The injury itself was of a most serious as well as unusual character, and the inflammation, which was slow to make its appearance, was quite uncontrollable when it did come on. It is hard to say what other or more promising treatment could have been used than that which was employed, except it had been amputation, or ligature of the femoral artery. Severe though the wound was, it did not present such a formidable appearance as to justify the suggestion of primary amputation, nor would the friends have submitted to it; and at a subsequent period, when suppuration became profuse, there is not the least probability that she would have survived it. The ligature of the femoral as a prophylactic as well as curative procedure in these cases, as suggested and practised by Dr. David L. Rogers, of New York, in 1849, and more recently by Mr. Maunder and other British surgeons, can scarcely be considered as a recognized plan of treatment; and yet, if it ever deserved a trial, it would be in such a case as this, though, whether such a subject would have survived it, is more than questionable. There was no injurious penning up of matter, as the large opening, assisted by the drainage-tube, served to drain it completely.

Wounds penetrating the knee-joint, even when small, are justly considered serious injuries, and yet at times they do perfectly well. We had a man in the hospital, in 1871, who had received a wound on the inner side of the patella, an inch and a half long, penetrating the joint, which had been inflicted three weeks previously, and on his admission synovitis had already set in. His leg was put up in a plaster-of-Paris bandage, leaving the front of the knee exposed, to which ice was applied. At the expiration of a week he became uneasy at his confinement and eloped from the hospital. We anticipated, of course, the worst of consequences from this rashaction, but I met him two months afterward walking freely with no perceptible limp. He said he had kept the plaster bandage on for two weeks and had then taken it off, and begun to walk about; the wound was healed, and, though his knee was stiff, it gave him but little trouble, and soon "got all right;" a result he certainly had no good reason to expect.

CASE II. *Destructive Inflammation of the Knee-Joint; Amputation; Recovery.*—Ellen H——, aged twelve years, native of Ireland, admitted February 11th. This child was a patient in the hospital during the month of February last year for chronic arthritis of the left knee; while in the house she improved satisfactorily, but her parents took her away at the end of a month, in spite of our remonstrances, and against the child's own wish, who cried bitterly when she was taken away. It seems that after her removal she continued to improve for a short time, and she was allowed to walk and run about, when she soon began to limp and complain of pain in her knee. This constantly increased, and for the last four months she had been confined to bed, suffering much pain, and frequently waking up at night, screaming loudly with violent starting pains in the limb, which would be jerked up quite a distance from the bed. Upon her admission the second time the left knee was very much swollen, but not uniformly so, the swelling being most prominent on the inner side over the internal tuberosity of the tibia. There was no fluctuation, the swelling was firm and elastic, the patella was movable. The joint was very hot and tender; she lay on her side, with the knee bent at rather more than a right angle; any attempt to move it was impracticable, as she screamed loudly with fear at the merest suggestion of such a thing.

Her pulse was quick, and her tongue somewhat furred, but, considering her long confinement and suffering, she looked remarkably well. She was placed under the full influence of chloroform, and the limb straightened, which was accomplished without any difficulty; it was kept straight by extension with a weight and pulley. While she was under the influence of chloroform the actual cautery was applied in three parallel lines over the inner or most swollen portion of the joint, the knee was covered with a hot, soft poultice, and an anodyne ordered for the night; ordered also full diet and cod liver-oil. The relief to pain was immediate and remarkable after the first night, when it was very moderate; the starting pains did not recur.

The sores made by the cautery were kept open for a month and then healed up; the child during this time made excellent progress, ate well, slept well, was free from pain, and in good spirits.

This apparent improvement, however, was only temporary and deceitful; at no time could she bear to have the weight removed, the slightest and shortest contact of the joint-surfaces producing severe pain. We tried the experiment of putting the limb up in a plaster-of-Paris bandage, but this was not well borne, and at the end of a few days had to be taken off.

So she went on until July, when rather suddenly the knee enlarged and became more painful. Upon approximating the joint-surfaces a grating crepitus was perceptible.

It soon became evident that the joint was full of pus, and it was accordingly freely opened by an incision on each side of the patella; afterward matter made its appearance below the knee, and was also evacuated. The little patient's health gave way, the discharge continued profuse, and gradually became offensive. Irritative fever of a severe type came on, the child emaciated rapidly, and her life was in grave danger.

Under these circumstances, on August 1st I amputated just above the knee by the circular method; hardly any blood was lost, and only one artery was tied. She experienced no shock whatever from the operation, but seemed better immediately afterward. She made a very rapid recovery, and improved immensely in general health. She was discharged, with a firm, useful stump, October 10th.

I have frequently seen her since, a fine, florid, healthy-looking girl, growing rapidly, and running briskly about on an artificial leg of domestic manufacture, which I really believe is more useful to her than the limb many times is, after even boasted cases of excision of the knee, where both the shortening and the long-enduring tenderness at the anchylosed joint are serious drawbacks to the result.

CASE III. *Railroad Accident.*—This case is mainly interesting from the *post-mortem* appearances observed.

C. E. C., aged forty-two years, a native of the United States, admitted February 18th, injured by a collision on the Hudson River Railroad.

He had a severe lacerated wound of the left foot, compound fracture of left forearm, upper lip cut completely through, slight cuts about the upper part of the neck, and fracture of several of the upper ribs on the left side. Shock was so severe and protracted that for two days it was doubtful whether he would ever rally; he did, however, and lived till the 24th, nearly a week, when he died of chest complications.

Post Mortem.—There was a severe lacerated wound of the left foot, by which all the muscles and integument of the sole, except a small portion in front, were completely stripped off, and hung in a loose flap; the wound was in a sloughing condition, and had he lived would have necessitated amputation.

There was a compound fracture of both bones of the left forearm, with great displacement, and laceration of surrounding soft parts. There was an irregular, jagged, superficial wound under the chin, several inches in extent, but only implicating the skin; the upper lip was cut completely through near the middle, but there was no injury to the bone or loosening of the teeth.

There was a fracture of the first five ribs on the left side, either near or at their junction with the sternum, and in the two lower of them there was a second fracture near their middle. In two places these fractures, being very oblique, had given rise to sharp-pointed extremities, which, apparently from the compressing nature of the force producing them, had been driven in upon the pleura, and given rise to severe pleuritis, as evinced by abundant effusion of both lymph and serum.

There was, also, either from the same cause, or extension of the inflammation, pericarditis, with serum and lymph in the pericardium, and congestion of the lower lobe of the left lung, probably coming on only a short time before death. The only indication of any preëxisting disease observed was an enlarged and fatty liver.

Implication of the viscera contained in the chest, from fractured ribs, seems to be tolerably rare, though always to be feared; how frequently it may occur to such a slight degree as to scarcely complicate the case or retard recovery, we have no means of knowing, but in these terrible crushing accidents it probably always takes place to some extent. Another man, injured in this same accident, had both legs smashed below the knee, and fracture of the skull; he died in a few hours, of shock.

CASE IV. *Chancroids; Phimosis; Circumcision; Good Result.*—I have always entertained a great dread of performing circumcision or any other operation upon the prepuce during the existence of venereal disease, from a fear that the poisoning of the wound might prove more troublesome than the condition for the relief of which the operation was performed; but the following case, important in no other particular, shows that this is not always so, but that sometimes at least freedom from the restraint of a tight phimosis is the *sine qua non* for the healing of such sores.

Eugene C——, aged twenty-six years, a native of Ireland, admitted April 23d.

He first made his appearance at the out-door department, two weeks before his admission to the house; he then stated that ten days previously he had had an impure connection, and a week afterward noticed some sores on his penis. At the time of his admission as an in-patient, the orifice of the prepuce was completely surrounded by a circle of small excavated ulcers; the prepuce was very much contracted, and could not be drawn back to the slightest extent. There were evidently, from the previous history, and from the present symptoms, viz., spots of hardness, pain, and discharge, two ulcers on the glans penis.

He was placed in bed and black wash applied to the sores at the preputial orifice, while a solution of carbolic acid was freely injected under the prepuce three times a day.

A bubo developed on the right side, which suppurated, was freely opened, and soon healed up.

The sores on the foreskin also speedily healed, but the occult ones were evidently getting worse rather than better. I was compelled, therefore, though reluctantly, to perform *circumcision*, which I much prefer to slitting operations.

The operation was performed on May 2d, in the ordinary way; the edges of the mucous membrane and integument were united by numerous points of fine suture.

Two irritable sores were found just behind the corona glandis; these healed rapidly after the operation, seeming only to have needed setting free from their unhealthy prison. As might have been expected, immediate union failed in the line of incision, but it never assumed a specially unhealthy appearance, or seemed disposed to spread; on the contrary, union took place by granulation, as in any wound which has failed to heal by first intention; it proceeded very favorably, and was complete in three weeks. He was discharged cured May 30th. The chancroids and the wound were both dressed throughout with carbolic acid.

Case V. *Stone in the Bladder; Median Lithotomy; Recovery.*—Henry Ward, aged nine, born in the United States, admitted June 13th.

This case was sent down from Sing Sing by Dr. Helm, of that place. The mother gave the following history:

She says he first began to complain about New Year's; his first complaint was of pain in his side; she thought he had worms, and gave him some vermifuge medicine; he passed no worms, but seemed to get better after this, but only for a few days; he then began to have incontinence of urine, both nocturnal and diurnal, wetting his clothes frequently by day, and his bed always at night; this symptom still continues.

He has severe pain in making water, and also before and after the act; sometimes he has sudden stoppage of the stream, and at other times difficulty in starting it; when he strains violently, he has pain in the end of his penis, and frequently pulls at his prepuce, which shows some evidence of this by being slightly elongated. His mother has never noticed either blood or pus in his urine, though she says it is sometimes thick; running or jumping gives him pain. He is a well-grown boy for his age, but has a pale, worn look, indicative of habitual suffering; his bowels are regular, but his appetite is poor, and he is losing flesh; his face is pitted with small-pox. He was chloroformed, a sound introduced, and a stone readily found; I judged it to be single, of moderate size, and hard consistence.

He was ordered to be kept quiet, have medium diet, flaxseed-tea for drink, and an anodyne at bedtime.

14*th.*—He took ten drops of McMunn's elixir last night, and slept well all night; he wet his bed in the night; seems quite comfortable this morning.

17*th.*—The patient has been very comfortable during the few days of his residence in the hospital; he wets his bed every night, but has only passed urine involuntarily during the daytime once; he complains of little or no pain on making water; to-night he is to have a dose of castor-oil, and at noon, to-morrow, a large injection of warm water.

18*th.*—At three o'clock, P. M., I performed the operation of median lithotomy, and removed an exceedingly rough mulberry calculus, weighing eighty grains.

The operation presented nothing worthy of remark, and was accomplished without difficulty of any kind.

For the first few days the patient, though he had not complete incontinence, had much less control over his bladder than we usually see after this operation; when he felt the desire to urinate, and called for the bedpan, if it was not supplied instantly, he could not retain his urine, but wetted the bed.

After a few days this passed off, and he had perfect control of his bladder during the daytime, but occasionally wetted his bed at night. His recovery was considerably retarded by an attack, apparently of circumscribed inflammation about the cæcum; there was a good deal of pain, with exquisite tenderness in the right iliac fossa, hot skin, furred tongue, pulse 120, temperature 102°. He was treated with morphine and poultices. The tenderness did not spread, and in about ten days the attack subsided; his mother informed us that he had had one or two previous attacks of a similar character. He was discharged well, July 21st, and I saw him about a year after, the picture of health, a perfect contrast to the pale, worn boy, I had operated upon.

This case fully confirmed all my favorable impressions of the operation of median lithotomy; indeed, for small calculi, it seems to me hard even to imagine a more thoroughly satisfactory procedure. I was much surprised to find in Dr. Gouley's recent work on "Diseases of the Urinary Organs," at page 347, in his table of American Operations, that I am credited with two operations and one death. This is a complete mistake; I have had no death from the operation; one of my patients died seven months afterward of calculous pyelitis, but the operation had no more to do with it than if he had died fifty years afterward of cerebral hæmorrhage.

[TO BE CONTINUED IN NEXT NUMBER.]

Notes of Hospital Practice.

BELLEVUE HOSPITAL, NEW YORK.

Rupture of Posterior Ligament of the Spine; Treatment by Plaster-of-Paris Dressing.—The patient was engaged on a scaffold, and fell a distance of forty feet. For three days after the injury, was unconscious, and on rallying it was found that there was loss of power in the left leg to a greater extent than in the right. There was no incontinence of fæces or retention of urine. An examination of the back showed a deep depression between the first, second, and third lumbar vertebræ, due to rupture of the ligament. The condition of the patient was such that he could not move, from the pain that ensued, and his existence was very miserable.

It was considered advisable to adapt a plaster-of-Paris splint to the back, so that complete support could be given. This was done, and the patient found himself able to get out of bed and walk around the ward without difficulty. Since the application of this device, there has been no trouble of any kind.

Another patient, a female, fell, in a kitchen, and was confined to her bed for three weeks, when the method referred to above was again used. As soon as the plaster hardened she was able to get up, and since that time has not been confined to her bed.

This method of treating injuries of the spine, as well as caries of the spine, has been introduced into the hospital by Dr. J. Bryan, and so far has yielded excellent results, especially in Pott's disease.

The method of applying the splint consists in first placing on the patient an under-shirt, which serves as a dressing to keep the splint away from the skin. Then a piece of old blanket, large enough to fold double, is taken and coated between its folds with a thick layer of creamy plaster. This is then placed on the back of the patient and allowed to mould, being retained in position by means of a roller-bandage.

The splint can be made much lighter by having strips of metal between the folds of the blanket, which will increase the strength without materially increasing the weight.

CHARITY HOSPITAL, NEW YORK.

Gangrene of the Leg, a Result of Phlegmonous Erysipelas.— The patient was a German, thirty-five years of age. His family history, as well as his own, had been very good.

A few days before coming into the hospital, the disease set in, and when he was examined in the ward phlegmonous erysipelas was noticed in the foot and leg. Free incision was made into the tissues, and the patient sent to the pavilion for treatment. Three days after incisions were made in the leg, a bluish tinge was discovered round the ankle. The leg became cold, and there were loss of sensation and inability to move it.

This bluish tinge extended upward to the knee, while the foot yielded an emphysematous crackle, with the characteristic boggy feel. At the present time the line of demarcation has made its appearance about two inches below the knee, and the case is in a fit state to have amputation performed. The patient feels well, and is not suffering from exhaustion. An examination of the patient showed no signs of cardiac bruit.

The only explanation of the cause of the gangrene is phlebitis as a result of the erysipelas. The case is markedly of interest to the practitioner in guarding him in the prognosis of a like condition.

Chronic Bright's Disease, with Erysipelas and Death.—This patient had chronic albuminuria, but was doing very well. Erysipelas began in the foot, accompanied with pain. Active delirium appeared, and the erysipelas extended upward, involving the leg, thigh, and side as far as the ribs. In two days the patient died.

Effect of Large Doses of Iodide of Potassium in Syphilis.—A woman eighteen months ago had hard chancre; nine months later an eruption appeared. She received no medical treatment.

Three months ago, fifteen after the initial lesion, she entered hospital. The palate was completely destroyed from syphilitic ulceration. Scattered over the body was a pustular syphilide. Treatment was commenced with sixty-grain doses of the iodide of potassium three times a day, and kept up for four months, with only slight improvement. At the end of that time the iodide was increased to one hundred and twenty grains three times a day and continued for a month. One week after the increased dose of the remedy there was a decided change for the better, and at the end of that month the patient was so far improved as to leave the hospital.

After a short stay outside she reëntered, with a marked change for the worse. Sixty grains three times a day was again tried, but failed as before. The dose was again increased, and in a short time she was very much improved. She is still taking the large doses of the iodide.

We do not think that large doses of the iodide of potassium will always yield the satisfactory results recorded in the above case, although it has the high sanction of Dr. Van Buren. Some years ago we had under observation a hospital patient who not only obtained no benefit from mercurial or the mixed treatment, but showed a tendency to get worse. He was at that time taking the biniodide of mercury, with iodide of potassium in medium doses. The dose of the iodide of potassium was increased to maximum, and in a very short time the patient was salivated profusely, and had, as a sequel, necrosis. The only possible manner in which this could have occurred was that the iodide rendered the mercury remaining in the system active, and produced the same effect as if it had been recently administered. Notwithstanding the salivation and increased doses of the iodide, there was no improvement in the general symptoms, and the patient left Bellevue to enter a private hospital. We saw him some years after, and received the grateful information that he had been cured after a few weeks by some herb-tea.

NEW YORK EYE AND EAR INFIRMARY.

Asthenopia with Hysteria.—A married woman of twenty-five years, who has had no children, applied at the infirmary with a small abscess of the lid, which soon disappeared. Patient then complained of asthenopia, could not read nor sew any length of time without the objects becoming blurred and the eyes very much fatigued. Eyes, when tested with Snellen's test-types, showed vision to be $\frac{20}{20}$, or normal.

Ophthalmoscopic examination revealed hypermetropia of one-eighth, the eye being otherwise healthy. Patient was fitted with suitable convex glasses for close work, and told to come back in a week. At the end of that time the patient returned, saying that all the asthenopic symptoms had disappeared. The patient came back again after several weeks, saying that latterly the glasses caused disagreeable symptoms. She was examined again, and, as the book reached about 8″, hysterical symptoms developed. Stronger and weaker glasses were tried, with the same effect. She was then ordered rest, with out-door exercise. She was seen again at the end of that time, when she could read quite well with the glasses.

The ophthalmoscopic examination was very carefully made, otherwise there would have been great doubt that the glasses were not suitable.

Luxation of Lens, and Choroiditis.—The patient was about forty years of age, and was struck in the left eye about one year ago. The eye was sore for some time, but had never been examined by a physician. Since the injury he was able to read large print with that eye, but about two weeks ago his condition became so much worse that with it he could not count the fingers at a greater distance than one foot. He was examined by Dr. Allan, who found the lens partially dislocated. An ophthalmoscopic examination of the fundus revealed a choroiditis. The partially dislocated lens acted as an irritant, causing the inflammation of the choroid, just as the old operation of couching produced irido-choroiditis after a few years, with loss of vision, in over fifty per cent. of the cases operated on.

Correspondence.

THE DANGERS OF TRAVEL IN SWITZERLAND.

INTERLAKEN, *September* 6, 1874.

Dr. James B. Hunter.

MY DEAR DOCTOR: After having spent a very pleasant time in Switzerland, and being upon the point of leaving it for France, I remember me of my promise to write to you, and proceed to its fulfillment. To you, who have traveled in Europe, the wonderful beauties of this country are too well known to leave it possible for me to entertain you by my jottings by the way, so that I shall give my remarks rather a professional inclination, and deal with matters hygienic.

Every one passing through Switzerland must be struck with surprise at the wonderful want of harmony existing between the people and the country which they inhabit. As you pass through altitudes in which the air is deliciously pure, the land well drained and fertile, and the water which rushes down from every mountain-side as clear as if distilled, one meets everywhere a badly-developed, pale, and feeble peasantry. Dwarfs and idiots are commonly seen, and goitre is, especially, it appears to me, in women over thirty years of age, exceedingly frequent. Up to four or five years of age the children are quite pretty, and present an appearance of health, but after that time they appear to be chlorotic, weak, and badly developed. The young women look prematurely old, and the old women unduly haggard and exhausted. The old men present none of the features of a hale and normal senectitude, but seem unnaturally feeble long before the lapse of the allotted threescore years and ten, and all whom I have seen are decidedly emaciated. In the cities, such as Lucerne, Bern, Zurich, and Geneva, the condition of the people is much better than I here represent it, but even this is contrary to what should be the prevailing rule. The inhabitants of the beautiful and healthy mountains should far surpass the denizens of cities in health and vigor.

Recognizing the truth of the declaration of the English poet—that

> "A bold peasantry, their country's pride,
> When once destroyed, can never be supplied"—

it is probable that the causes inducing this state of things have been fully examined into, and that the matter has been treated to the wonderfully muddling influence of "statistics." I do not propose dealing with these, but will give you instead the suggestions made by common-sense from a mere *coup d'œil* in passing through the country.

Although I am unable to substantiate the fact, it seems to me highly probable that overwork and underfeeding have a great deal to do with these national evils. The children are certainly encouraged to carry upon their backs burdens which are much too heavy for them, and even in summer they are too much and too long exposed to inclement weather, as they tend the cattle upon the mountain-sides.

Another very patent evil influence is the breathing of foul —very foul—air while shut up in their houses during the long and severe months of winter. Fuel is scarce, the weather intensely cold, the Swiss, as a people, exceedingly economical and saving; and the result of a desire to economize heat, and make the most of that produced, leads to a too lengthy imprisonment of and vitiation of the air. In many houses no chimney exists, the smoke escaping through a hole in the roof, and over almost all the chimneys a covering of boards is at times applied so as to keep out falling snow. But this is not all which vitiates the atmosphere in the *chalets* or cottages. In every house the privy is either in the cellar, in the piazza, or so near the house as to be connected with it by a few feet of shed. The accumulating fecal matters are not exposed to the disinfecting influence of currents of air (as is the rule in our country-places), nor washed away by water. The economic farmer keeps them to fester and putrefy for two or three weeks, when they are added to the dung-heap. In passing, and still more markedly in entering, a *chalet*, the odor of these places can usually be distinctly detected. That the effluvia thus engendered help to lower the vital forces, and depreciate the blood-state of those whose lungs inhale it during the long periods of confinement during the winter, few will doubt. One cannot imagine a very active, joyous, and energetic nervous system developing in lads and lasses who, sleeping and waking, have *le bouquet du cabinet sous le nez.*

Some years ago I was much amused by reading, in the advertisement of a manufacturer of "disinfecting earth-closets," the statement that since the creation of man there has ever been an irrepressible conflict between him and fecal matter. In traveling outside of large cities, this statement has over and over recurred to my mind, and I have been led to believe the assertion strictly correct. Nay, more, I have thought that so far the advantage was by no means on the side of man. But in Switzerland "ils ont changé tout cela." The lion and the lamb have lain down together, and the lamb nestles very close to the lion. Even if expediency, or convenience, or necessity were urged as a palliation for the crime of keeping putrefying human fæces where it must poison the air of a habitation, there can be none for building the everlasting, singularly odoriferous, omnipresent dung-heap against the wall of the house, a few feet from the front door, or, as I have often seen, in the basement, one face of which is left open to receive it! The dung-heap seems to be one of the chief of the Swiss penates! That it should be regarded as "the farmer's sheet-anchor," I have often heard, and well can I believe it. But I cannot believe that it should be made the pivot of farm-life; the hub of the bucolic universe! English, Dutch, and German farmers, I am sure, venerate their "sheet-anchor," but in none of the countries which they inhabit is it brought so immediately to one's olfactory notice as it is here. Are you clambering up the side of some mountain, inhaling the pure air with pleasure—suddenly you stumble over a *chalet* sitting like a hare upon the steep hill-side, and as suddenly you become conscious that a sheet-anchor has been insinuated "betwixt the wind and your nobility." Are you wandering up some lovely valley—without notice you snuff a tainted gale, and you know, without looking for the smoke that so gracefully curls from it, that a *chalet* is near, with its constant attendant.

Unfortunately, this contempt for the influence which decaying fecal matters exert in the production of septic disease, an influence which is now everywhere admitted, shows itself not only among farmers, but in the hotels which are every summer inhabited by thousands of our countrymen. In some, water-closets exist; in others, fecal deposits are collected in stone cisterns, which are occasionally emptied; but in many of the former water runs so irregularly and fitfully that they do not deserve the name of water-closets. As these are all within the hotels, poisonous effluvia are constantly escaping and mingling with the air of the building. The results of this criminal neglect or short-sighted economy on the part of the landlords can readily be traced by the footprints of septic diseases which should be little known in this beautiful land. When in Lucerne, I met with a lady from Dresden who was so strongly urged by her physician against visiting a neighboring city in Switzerland, because typhoid fever was rife there, that she gave up her proposed trip.

Another pernicious and disgusting practice in Switzerland, which exposes hundreds to disease, is that of watering growing vegetables with liquid manure. The fluid dripping from the dung-heap, which consists of human fæces as well as those of the lower animals, is thrown over lettuce and other growing plants. You see men and women thus occupied every day along your route. In most cases this does no harm, but in that of lettuce, which is eaten green, and after washing only in cold water, it is a habit which should be severely punished by law. Apart from its being disgusting in itself, and injurious in a general way, what means could more certainly effect the spread of tape-worm than this wanton connivance at the immediate migration of the eggs from the intestines of one individual to those of another? Surely, the laws of Draco would not be unsuited to this crime, however antiquated our juries have come to regard them in cases of mere murder.

It is wonderful to see upon how trivial matters the government of this country legislates! For example, the trees to be cut for winter fuel from the mountains are numbered, and lots are drawn for them by all the neighboring families. Is it conceivable that so painstaking and minutely careful a corporation can go on year after year overlooking the abuses which I have mentioned—abuses which not only exert a depreciatory influence upon the nature of the country, but must surely jeopardize the lives of those foreigners whose yearly contributions to the finances of the country are like oil to a lamp? Does not such strict regard for trivialities, and such supreme contempt for matters of great hygienic importance, convict this body of being "penny wise and pound foolish?" No government is justified in allowing its people ignorantly to indulge in practices prejudicial to their own health—still less so to that of the strangers whose advent constitutes in great degree their prosperity and national well-being. Few will doubt, with the views now held upon sanitary affairs, that a wise legislation upon these points would cause a visible improvement in the physical condition of the wretched peasantry of Switzerland, and render much less frequent than they now are cases of adynamic and septic diseases among foreigners. It is certainly time that the notice of the government should be called to the subject, and it should be urged to do what is a plain duty upon its part.

I am, dear doctor, truly your friend,

T. G. T.

THE HYPODERMIC USE OF QUININE.

Cold Spring, N. Y., *November* 2, 1874.

Mr. Editor: May I trespass a little further on your space to ask the insertion of an extract from a letter received three weeks ago, from Dr. G. A. Mursick, of Nyack, on the subject of the "hypodermic use of quinine?" He is an ex-surgeon of United States Volunteers, has had a large experience, and is well known by the profession. The experience of Dr. A. A. Woodhull,[1] whom I know personally, and much respect, is so extraordinary, and so contrary to that of myself and a great many medical acquaintances, who have used my solution, both in private and hospital practice, that I can only explain it, as every physician of large experience has, no doubt, been called upon to explain such occurrences, on the theory of accidental coincidences. He used it in but three cases; very likely, were he to use it in three hundred others, judging from a very large experience, he would not have three more such cases. And I would suggest always the *arms*, in preference to the *hips* or any other part, unless there is some contraindication; as the hips and thighs are the worst points, in my estimation.

(*Extracts from Dr. Mursick's letter, dated October* 6, 1874.)

"My impression is that he[2] makes many exaggerated statements that are not sustained by the facts of experience, both in regard to hypodermic medication in general and of *quinine* in particular. Medicines administered by this method are, according to my experience, more prompt in their action than by either the *mouth* or *rectum*, that by the rectum being the least efficient of all. I have yet to discover any special danger attending it. In more than one thousand injections of morphine, quinine, and strychnine, given by myself, not a single abscess has occurred; and the amount of inflammation was not very great, when it occurred at all. In a number of cases a certain amount of induration of the cellular tissue occurred, the duration of which was variable. The parts are always more or less painful *to the touch* for several days after the injection, but not sufficiently so to give rise to any special annoyance to the patient. None of them have refused to have it repeated" (he refers to quinine) "and many have regarded the promptness of action as something remarkable. To one I gave sixty-two injections of quinine. To another forty-two, . . . without the formation of a single abscess, or any troublesome inflammation following; and, in many other cases, where from one to five injections were given, the results were the same."

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[1] New York Medical Journal, November, 1874.

[2] Reference to an article of Dr. S. Rogers, in this Journal.

Thus, your readers will see that Dr. Mursick's experience accords exactly with my own. This letter of his was received before the publication of Dr. Woodhull's cases, and was not requested by me, as I have no personal acquaintance with the doctor. It will be seen by those who read my paper in this JOURNAL for March, 1874, that my statements can be corroborated, if necessary, by the medical gentlemen who assisted me, and who have continued the treatment in their own practice, both hospital and private, and who are readily accessible to correspondents. This matter has attracted so much attention, and I have received so many communications concerning it, that I know this additional notice will not be unacceptable to all your readers. I hope that Dr. Woodhull will try again with the improved formula published in a late number in this JOURNAL and in the *Medical Record*.

Respectfully yours,

FREDERICK D. LENTE, M. D.

Proceedings of Societies.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, October 28, 1874.

DR. H. KNAPP, President.

Artificial Anus; the Result of a Hernia.—Dr. SATTERTHWAITE presented an interesting specimen showing the possible result of an incarcerated hernia. The history was as follows:

The patient was an unmarried woman of about forty years of age, and entered the Presbyterian Hospital September 9, 1874, under the care of Dr. Gurdon Buck.

On admission, there was found a tumor in the left groin, which was not painful, but gave to the fingers the sensation of being composed in part of air. The patient stated that two and a half weeks before admission she was attacked with vomiting and purging, which partly subsided, the vomiting only continuing. Three days after admission, an opening appeared in this tumor, and at the end of a week the patient died. When the parts were closely examined after death, a small loop of intestine was found in the femoral canal, engaged only by its peripheral portion. The gut opened by means of this perforation on the outside, where an ulcerated surface, seven inches one way by three another, remained to show the site of the former tumor. A critical examination of the case would prove that, in all probability, as a result of the diarrhœa, the intestine became involved in the ring and either suffered a partial rupture, or, what is more likely, became gangrenous. The fecal matter escaping made its way by means of suppuration to the surface, and in this way, by the channel so established, a tumor was formed containing air.

Papillary Growth of the Milk-Ducts.—Dr. SATTERTHWAITE also presented a small tumor of the breast removed by Dr. Sands at Roosevelt Hospital. The history of the case was as follows:

The patient was forty-five years of age, and had been married twenty-three years. Has had three children. The first was a child at eight months, which lived only three months. By the advice of the physician, lactation was kept up by means of the breast-pump. Shortly after this, received an injury to the breast. She nursed the next two children, but ten months before the last birth detected a discharge from the nipple. Fifteen or sixteen years ago a small nodule made its appearance, which did not increase in size. Five or six years ago a granulation appeared on the nipple, which was not cured by treatment. After the removal of the breasts, it was found that several of the larger ducts were filled up with a growth containing elements of the glandular tissue proper. This growth extended to the surface of the nipple, and was the cause of the granulations. The small nodule was fibrous.

Dr. SATTERTHWAITE is of the opinion that this is an adenoma, from the presence of the glandular elements, and suggests that it be called intra-canalicular. The ducts containing this papillary growth were about the size of a goose-quill. The tumor developed during lactation.

Rupture of the Bladder.—Dr. Erskine Mason presented an interesting case of rupture of the bladder, showing the obscurity that may attend this injury.

The patient was a boy of eleven years, who entered Roosevelt Hospital, July 8th, having been injured on July 2d by receiving a kick in the perinæum. There was not much pain complained of at the time, but some hours after he was unable to pass his water, though he did so subsequent to the injury. In forty-eight hours his retention was relieved by the catheter.

I examined him on July 10th, and found no contusion or apparent injury of the perinæum.

12*th.*—Passed bloody urine, and complained of pain over the pubes.

19*th.*—Was given a hot bath, and was then able to pass a few drops without the assistance of the catheter. Up to this time the quality of the urine varied; at some times it was clear, at others purulent, and again it would be of a dark-brown color.

20*th.*—At 5 P. M. became drowsy. Respiration slow, and patient became cyanotic.

21*st.*—Complained of more pain. On introducing the catheter it was found to meet an obstruction at the neck of the bladder. Examining by the rectum, a large swelling was found behind the bladder, resulting from pelvic peritonitis. At this time the bladder was opened by the same operation as that of lateral lithotomy. When the finger was carried in, a soft tumor was discovered. Several hours later the bladder became again distended, and had to be relieved by the catheter through the wound.

22*d.*—Examined the bladder again through the wound, and pushed something upward before the finger.

24*th.*—Dilated the wound by Sir Henry Thompson's dilator, the catheter being of no avail. At this time tympanitis appeared, with a good deal of pain, which in a day or two passed away.

28*th.*—Pus began to drain away from the wound, and continued so till the patient died.

August 8*th.*—Diarrhœa set in, accompanied with pleurisy.

11*th.*—Patient died.

Autopsy—Bladder.—A rupture was found at the side, near the neck, on the side opposite to that of the operation. In the specimen it was only large enough to pass a lead-pencil through. The urethra was also ruptured. One of the results of the rupture was pelvic peritonitis, which bound the rectum to the bladder at its base. It is a point of interest to know that the patient did not die shortly after the injury, which is to be accounted for mainly by the reason that the urine did not escape into the peritonæum.

Dr. Mason stated also that he had operated on a patient two years ago for rupture of the bladder in a manner similar to the one just mentioned, and that the patient lived forty-one days.

Dr. Peaslee had a like case which lived forty-two days.

Dr. Mason was of the opinion that, if he had made an examination by the rectum when the patient entered the hospital, he might have had his attention directed to the true nature of the case, but at that time there was no indication of serious trouble, and even for ten days or two weeks he was able to run about the hospital-grounds and play.

Fibromata of the Lobule of the Ear.—Dr. Knapp presented two tumors removed from the ear of a negro woman. One of them was the size of a hen's-egg, the other the size of a nut. The larger one occupied and replaced the lobule on one side; the smaller one to a lesser extent on the other. The operation consisted in two flaps of unequal size, the outer being the larger and sufficient to bend round to a certain extent and unite with the lesser, so as to allow the sutures to be on the inside and removed from observation. The operation on either ear was made bloodless by applying an entropion forceps above the tumor, and in this way cutting off the circulation.

The tumors were composed entirely of connective tissue, and were of interest in showing that in all probability they had their origin in the irritation caused by the use of ear-rings, the perforation passing through the middle of each tumor.

Caseous Degeneration of Bronchial Glands.—Dr. J. L. Smith presented the thoracic organs of an infant five months and a half old. The most important symptom was a wheezy respiration, continuing for six or seven days before death. This change in respiration had its cause apparently in the larynx or trachea. The throat was examined for peripharyngeal abscess, a frequent cause of this condition, but none was detected, and the diagnosis then rested on an enlarged bronchial gland. Diarrhœa set in, and the patient died.

Cheesy bronchitis was discovered, one of the glands being quite prominent near the bifurcation of the bronchi. There were minute tubercles also in the lungs, one of them the size of a pea. Several tubercles were also found in the spleen. The three most common causes of this change in respiration are peripharyngeal abscess, abscess under the mucous membrane of trachea or bronchi, and enlarged bronchial glands.

Acute Nephritis.—Dr. Smith also presented two kidneys removed from a patient who died in Charity Hospital. The patient was seized with coma, and shortly after died. The house-staff diagnosticated apoplexy, as any one would have done under the circumstances; but at the autopsy the brain was normal, or only slightly congested. The kidneys were deeply congested, but had not been examined with the microscope. Some of the urine was obtained from the bladder, and found to contain a large amount of albumen.

Stated Meeting, November 11, 1874.

Dr. H. Knapp, President.

Cystic Tumor connected with Stomach; Cancer of Pylorus and Liver.—Dr. Finnel presented a specimen of cancer of liver obtained from a female aged forty years. Three years before death she complained of gastric symptoms, supposed to be caused by cancer of the stomach. The liver was not suspected. An examination of the epigastrium revealed a small tumor which was not fixed, and could be moved around in the abdominal cavity. The immediate cause of death was ascites. At the *post-mortem* examination, the pylorus of the stomach was found to be the seat of cancerous disease. The liver was entirely permeated by cancerous deposit, and, in the opinion of Dr. Finnel, there was not two ounces of healthy liver-tissue. There was no disease in the gall-bladder.

The most remarkable feature of the case was a cyst about the size of a fœtal head, attached by a small pedicle to the pyloric extremity of the stomach, and filled with reddish fluid, which the doctor compared to chocolate. This fluid also was presented in a bottle, and referred to the microscopical committee for report. The liver was also referred to the microscopical section.

Resection of the Hip in a Child of Twenty-one Months.—Dr. Sayre presented some small specimens of bone removed from a patient aged twenty-one months, under the following circumstances: Three months before, the child had double pneumonia, and, shortly after recovering from it, fell on its left side, with the limb abducted. The patient was in charge of Dr. Husted, who found, some weeks later, an inflamed gland in the inguinal region, which was followed by an abscess. Dr. Husted aspirated this and removed two or three ounces of pus; an opening was then made into the abscess, and it was allowed to discharge. The limb was markedly œdematous when seen by Dr. Sayre, and after anæsthetizing the patient and extending the incision, the end of the femur was found to be eroded. At the end of a week the former incision was carried sufficiently far upward to allow the eroded head of the femur to be removed by means of a metacarpal saw, without changing the position of the limb. After the operation Dr. Sayre carried his finger down posteriorly till the skin was reached, and having opened it introduced a tent and closed the wound anteriorly. The little patient did exceedingly well, though it had never received any nourishment except from its mother's breast.

Dr. Sayre said this was the youngest patient he had ever operated on.

Resection of Hip in a Boy Seven Years old.—The patient received an injury on the left hip about three years ago, while jumping. Destruction of the joint ensued, with the characteristic deformity. Five or six sinuses were found situated all around the joint. Four weeks ago he was operated on, the head and neck of the femur being removed. The acetabulum was completely destroyed, leaving a large opening in the ilium, surrounded by necrosed bone. At the operation this dead bone was also removed, and the child placed in wire breeches.

To-day the patient was able to walk down to Bellevue Hospital with an appliance on, but the wound so far has not completely ceased suppurating.

Dr. Sayre said this was the fiftieth case in which he had performed the operation.

Passage of a Scissors through the Abdominal Walls after being swallowed.—Dr. H. B. Sands presented a scissors five inches long, which had been swallowed by a patient in a lunatic asylum. The history of the case was given him by Dr. Edward Farrel, of Halifax, N. S., and was substantially as follows:

The patient was afflicted with suicidal mania, and stated that she had swallowed a scissors, but, inasmuch as she was addicted to lying, she was not believed. Some time after this she complained of pain in the right side above the umbilicus, and to the right of the median line. A tumor appeared which was poulticed; an ulcer formed, and it was then found that the points of the scissors were protruding. Sponge-tents were introduced to enlarge the opening, but, from threatened peritonitis, their use had to be abandoned. From this opening intestinal and biliary matters came away, which showed a communication with the pyloric extremity of the stomach, if not the small intestine. It was found that the scissors, as presenting, could not be removed; but, by unfastening the rivet, one blade, then the other, was successfully removed. The blades were five inches long and three-fourths of an inch wide.

Twelve hours after the exit of the last blade, there was no trace of biliary or intestinal matters, and in two days the wound had completely healed up, and very shortly after she was perfectly well.

The patient also stated that she had swallowed the plug of a bath-tub some time previously, and found it to pass by the rectum without any difficulty.

Tumor of the Parotid Gland, with Facial Paralysis; Removal.—Dr. Sands also presented a tumor of the parotid gland, which he had removed a few hours previously. The patient was sent to him by by Dr. Knapp, and had the following history:

For thirty years he has noticed this growth in the side of the neck, but it is only during the last two years that it has given any annoyance. At the time of operation the tumor had extended upward so as to elevate the lobule of the ear downward along the sterno-mastoid muscle, and inward behind the ramus of the jaw. The skin was freely movable over it with the exception of one place, where it apparently had become involved and attached.

There was marked paralysis of the seventh nerve, shown in the inability to close the eye. This paralysis has been noticed since the tumor began to increase in size. The size of the tumor was three inches one way by three and a half the other.

It was impossible to remove it in one mass, and it had to be enucleated in detached portions. There was no hæmorrhage to speak of, and the carotid was not seen. The tumor had its seat in the parotid gland, and was apparently scirrhous.

It was referred to the Microscopical Society for examination and report.

Dr. SANDS also showed some large photographs of tumors of the neck operated on by different surgeons.

Sarcoma of the Brain, with Extosis of Skull.—Dr. E. G. JANEWAY presented a brain showing a sarcoma that had in its centre a depression caused by an extosis of the skull. The case was aged thirty years, and entered hospital September 26th. He was a barber by occupation, and gave no previous history of syphilis or any thing relating to the interesting features of the case. Five months before admission, complained of weakness of his legs and arms, with headache, at times followed by attacks of dizziness; and before admission had incontinence of urine. When he was examined in the hospital, his intellect was fair, eyesight normal. No irregularity of the pupils. The sense of smell was deficient on left side. The facial muscles on left side gave evidences of slight paralysis. The left arm was paralyzed, and also the leg to a slight extent. He gave a history also of passing into an unconscious state, and remaining in that condition for forty-eight hours. On another occasion he had an attack for thirty-six hours.

On November 1st became similarly affected. On November 5th had another relapse, and remained in that state for three days.

8th.—Rallied, fell back, and shortly after died.

The temperature never exceeded 99½° Fahr. Before death the diagnosis of tumor was made out, though the true condition of affairs was not suspected.

Autopsy.—All of the viscera, with the exception of the brain, were normal. On the right side of the skull an exostosis was discovered, dipping down to the extent of half an inch into the brain. It was about three-fourths of an inch in diameter. The portion of brain pressed on by this exostosis was one of the frontal convolutions on the right side, and surrounding the bony growth in the surface of the brain was a sarcoma.

Dr. Janeway recollected a somewhat similar case where epileptic attacks, followed by transient paralysis, took place at each menstrual period. In the present case there was no epilepsy throughout the progress of the disease. In the case referred to by Dr. Janeway, several tumors were scattered over the surface of the dura mater.

Sarcoma of Upper Jaw.—Dr. Post presented a case of this nature, which he had removed piecemeal. It involved the molar bone and tissues in the neighborhood. Before proceeding to the removal of the growth, Dr. Post tied the common carotid, as has been advised by Hamilton and some others, to prevent hæmorrhage from vessels that, passing in bony canals, are not accessible to the ligature. The incision was commenced at the inner canthus of the eye, and carried down the border of the nose as far as the angle of the mouth, and another incision was then carried outward beneath the eye, and the whole growth removed in portions at a time. An examination of the case by the microscope showed no bony spiculæ, but simply nodules radiating from the periosteum.

Considerable discussion took place on the propriety of tying the carotid in cases like the one described.

Dr. Sands thought there were many objections, one of which was, that it did not stop hæmorrhage from the return circulation of the other side. Another was, that a frequent result of the ligature of the carotid was white softening and death.

Dr. Post said that in the case just operated on there was no hemiplegia, and at the present time the case was doing very well. The advantage claimed for the ligature of the carotid, besides controlling the bleeding, was that it tended to prevent a recurrence of the growth by depriving the parts of their nutrition.

Dr. Sands said that he had tied the carotid in two cases for this purpose, and in one of them the growth of the tumor was not retarded, and in the other the patient died of paralysis.

Dr. Knapp was of the opinion that the danger was a great drawback to the operation.

Dr. Post also presented three fibrous tumors removed from a piano-maker, one on either elbow, and the third in the gluteal region. Also two calcareous tumors from the sides of the larynx.

Dr. Janeway thought that the tumors found in the neck were lymphatic glands which had undergone calcareous degeneration.

NEW YORK ACADEMY OF MEDICINE.

Meeting, November 5, 1874.

Dr. Austin Flint, President, in the chair.

Acute and Subacute Spinal Paralysis; Inflammation of the Kinesodic Tract of the Spinal Cord.—Dr. Seguin read a learned and lengthy paper on this subject, which has only come to the knowledge of the profession within the past few years. Twenty-two cases were reviewed, which included five that had come under his own observation.

Duchesne recognized it first in 1847, and brought it before the profession in 1853. It is nearly identical with infantile spinal paralysis. After a careful examination of all of the reported and personal cases, Dr. Seguin recapitulated the symptoms as mainly referable to three groups, viz., mobility, sensibility, and nutrition.

In some cases changes in respect to mobility appear suddenly, in others more slowly, and in the whole series of cases every modification was apparent. In some cases the paralysis was general, in others paraplegic, and in others speech was affected. The muscles of the neck, chest, abdomen, and sphincters of the anus, were not affected.

As regards sensibility, one-half of the cases gave evidence of anæsthesia. Morbid sensibility was an abundant and an early symptom. Another important symptom was subjective cold. In three cases there was a feeling of a constricting band. In one case wasting of the tongue. There was never a tendency to the formation of bed-sores. There was muscular atrophy, with loss of contractility under the influence of electricity.

The diagnosis mainly rests on the atrophy of the muscles, with a loss of contractility, and in all its symptoms closely resembles infantile paralysis.

The pathological anatomy of the disease shows a granular degeneration of the ganglionic cells of the anterior horns of the spinal cord. The posterior were normal. No lesion was apparent to the naked eye, but under the microscope some of the ganglionic cells of the anterior columns contain yellow pigment, others are changed in form, while others have disappeared.

Treatment.—In the early stages counter-irritation is indicated over the spine. In the chronic form galvanism should be used to cause contractility. When contractility is good, faradism may be used.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Sixty-ninth Annual Meeting, October 26, 1874.

DR. ELLSWORTH ELIOT, President.

THE result of the election for officers was as follows:

President, Dr. H. B. Sands; Vice-President, Dr. T. A. Emmet; Recording Secretary, Dr. A. E. M. Purdy; Corresponding Secretary, Dr. F. A. Castle; Treasurer, Dr. H. B. Farnham.

Censors: Drs. E. Eliot, H. T. Hanks, J. E. Janvrin, J. C. Peters.

Delegates for four years: Drs. J. C. Dalton, A. E. M. Purdy, J. E. Janvrin, G. M. Smith, H. B. Sands, E. Krackowizer, F. A. Castle, A. H. Buck, A. B. Crosby, A. Jacobi, T. R. Pooley, C. M. Allin, F. P. Foster, H. B. Farnham, J. H. Emerson, L. De F. Woodruff, H. G. Piffard, H. T. Hanks, C. W. Packard, Geo. Bayles, Mary Putnam Jacobi.

ART. I.—*A Treatise on Food and Dietetics, physiologically and therapeutically considered.* By F. W. PAVY, M. D., F. R. S., etc. Philadelphia: Henry C. Lea, 1874.

DR. PAVY begins with some "introductory remarks on the dynamic relations of food," which are quite brief, but which give, sufficiently in detail for the purposes of this work, a sketch of the history of the doctrine of the "Conservation of Energy," and of its various applications to physiology. Next are considered the "origination of food," and the "constituent elements of food." The last-named section contains some of the most interesting matter of the book. The author is not a believer in the old doctrine of Liebig, that nitrogenous food alone is a force-producer.

He argues against the theory that the urea excreted is the expression of the muscular work done, and in his argument makes use of the well-known experiments of Fick and Wislicenus upon themselves in mountain-climbing; of Dr. Parkes upon soldiers; and of Dr. Flint, Jr., upon Weston, the pedestrian. From the last-named observations, he draws conclusions very different from those of Dr. Flint. We have not the space to follow the argument in detail, but the author thinks himself justified in summing up as follows:

"Suffice it here to reiterate that muscular action is not to be considered as the result of muscular destruction, as was formerly supposed, and hence that nitrogenous matter is not applied through muscle, in the manner hitherto maintained, to the development of muscular force. Thus much, from the evidence before us, may be said, but, at the same time, common experience seems to show that a plentiful supply of nitrogenous matter in the food tends to increase the capacity for the performance of muscular work. If, however, it does so in any other way than by supplying material for nutrition and the secretions, and so contributing to the production of a fully nourished and vigorous state of the system, we have no data before us to indicate how."

The excretion of urea, however, does bear a direct relation to the kind of and amount of food ingested; the amount of urea being directly proportional to the amount of nitrogen.

The author makes a still further attack upon the older theory of Liebig, regarding the use in the economy of the fats, and to them he assigns a high rank as force-producers. Following this general discussion are some two hundred and fifty pages describing the peculiarities of the various kinds of animal and vegetable food, and the beverages, in use in various parts of the world.

After a section upon the principles of dietetics, another on practical dietetics discusses what, how much, and when to eat, and how to prepare the food. Under the same head are considered diet for infants and diet for training.

The process of training has now become a much more rational process than it formerly was, and the diet given in the Cambridge system (for rowing) is calculated to keep one in good condition if continued for a much longer time than the conventional month or six weeks of training. Therapeutic dietetics, dietetic preparations for invalids, and the dietaries of many of the British hospitals and asylums, conclude the book.

From the sketch above given of the contents of Dr. Pavy's treatise, it will be perceived that it is likely to prove useful in various ways, since it presents, side by side, a sufficiently long and quite fair statement of the present condition of our knowledge of food in the wider sense, and, from a physiological point of view, much convenient information regarding individual articles of diet, and very suggestive hints upon dietaries in general and special.

ART. II.—*The Leprous Diseases of the Eye, with Six Colored Plates.* By Dr. O. B. BULL, Member of the Norwegian Medical Society; Privat Docent in Ophthalmology at Christiania; and Dr. G. A. HANSEN, Member of the Norwegian Medical Society, Physician to the Leprosy Hospitals at Bergen. Christiania: Albert Cammernreyer, 1873. Pp. 27.

THIS little volume is a systematic description of the forms of eye-disease which occur in leprosy, both in their clinical and anatomical features.

The authors distinguish the affections which are the immediate expression of the dyscrasia, from those not primarily affecting the eye.

Two varieties of leprous disease are recognized as affecting the eye, i. e., "tuberous" elephantiasis, or lepra tuberculosa, and "smooth" elephantiasis, or lepra levis. The cornea and iris are the most frequently affected. Iritis is said to occur in about thirty per cent. of the cases, and with equal frequency in both varieties—in one (the tuberous form) as a direct development of tubers in the iris; in the other (smooth) as a secondary affection, the result of paralysis of the orbicularis muscle.

The anterior portion of the choroid and retina are also at times involved.

As a result of deposit of leprous products in the eyelids and their vicinity, ectropion and paralysis of the orbicularis muscle occur.

The plates aid very little in conveying an idea of the changes in the cornea and iris so well described.

No little credit is due to the authors for their careful study and description of these forms of eye-disease, which is a valuable contribution both to the literature of ophthalmology and dermatology. We commend its perusal to those interested in these specialties.

ART. III.—*Erysipelas and Childbed Fever.* By THOMAS C. MINOR, M. D. 8vo, pp. 131. Cincinnati: Robert Clarke & Co., 1874.

DR. MINOR is an ardent believer in the unity of the especial poison of erysipelas and that of puerperal fever, seeking to inquire into the relation the diseases bear to each other by reference mainly to statistics taken from the census reports of 1870; indeed, the book is made up largely of statistics, with inferences drawn therefrom.

The death-rate of the two diseases within a certain locality, for a given period, as based upon census statistics, affords no definite idea of their precise relation, from the following facts:

1. The cases of each may have occurred remote from each other, both as regards location and time of occurrence. As close a connection of death-rate might equally well be drawn between any two diseases which are known to possess no causative relation. 2. The ratio of deaths of either disease to the whole number of cases is unknown. 3. The proportion of cases of so-called *puerperal fever*, which might now properly be classed as septicæmia, metritis, and peritonitis, is unknown.

The author quotes from Prof. Barker's book,[1] and leaves the reader to infer that that author is a believer in the identity of puerperal fever and erysipelas. If we understand Dr. Barker, his argument favors the existence of puerperal fever as an idiopathic disease, depending upon an unknown poison, and not to be confounded with septicæmia, idiopathic peritonitis or metritis, scarlet fever, typhus fever, small-pox, etc.; although he admits that some of these affections may be associated with puerperal fever, and urges that various local imflammations are associated with disease as a *result*, but not as a *cause*.

We are ready to admit that, during epidemics of any sort, the air (especially in hospitals) may become so vitiated as to predispose the lying-in woman to puerperal fever; but this does not prove the identity of puerperal fever with the existing epidemic. The precise relation of erysipelas to puerperal fever may not be fully understood at present, but we venture the opinion that during an epidemic of contagious erysipelas the disease in the shape of peritonitis may be developed occasionally in a puerperal woman, just as pneumonitis[2] may be developed from the same cause, but this is not puerperal fever; or septicæmia may result, from personal communication with cases of erysipelas or through the digital examination of the physician attending such cases. Erysipelas may be developed in an infant whose mother is suffering from puerperal fever, partly in consequence of local irritation, but more particularly from the vitiated condition of the blood due to the condition of the mother.

The collection of the facts for the present volume was attended with much labor, and the work will be very interesting to those desirous of studying statistics.

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[1] "Puerperal Diseases," 1874.

[2] *Vide* Aitken's "Science and Practice of Medicine," vol. i., p. 731, third American edition, 1872.

We think the author shows want of taste in using in a didactic treatise such expressions as "The States," "The sunny South," "Good old North Carolina State," etc., etc.

Art. IV.—*Croup in its Relation to Tracheotomy.* By J. Solis Cohen, M. D., etc. 8vo, pp. 78. Philadelphia: Lindsay & Blakiston, 1874.

This is a useful little work in which is discussed the necessity of tracheotomy in croup (with exudation), together with all the questions relating to the performance of the opertion and the after-treatment. It is rendered more complete by the copious references. Croup as a disease is not considered by itself, nor is tracheotomy except in relation to croup.

The author adopts the following among his conclusions:

1. An anæsthetic is admirable, used with caution.

2. *Careful dissection* should be made, and arrest of hemorrhage accomplished if possible before opening the trachea.

3. The windpipe should be opened as near as possible to the cricoid cartilage.

4. A piece of the trachea should be excised, or a dilator used.

5. Strict attention should be bestowed upon the after-treatment.

Art. V.—*The Address in Obstetrics, delivered before the Medical Society of the State of Pennsylvania,* May, 1874. By William B. Atkinson, M. D., etc. 8vo, pp. 43. Philadelphia: Collins, 1874.

This address is a digest of the most important developments in obstetrical and gynæcological science, with allusions to some of the most important articles which have appeared in this and other journals in this country and abroad during the year. The pamphlet contains a good deal of information in a nutshell.

Books and Pamphlets Received.—Clinical Contributions. Three Cases of Induration of the Os and Cervix Uteri, the Result of Syphilis. Two Cases of Syphilitic Insanity. Four Cases of Anomalous Localities of Chancres, Extra-Genital, with Remarks, by W. H. Henry, M. D., Surgeon-in-Chief to the State Emigrant Hospitals, etc. Reprinted from the *American Journal of Syphilography and Dermatology*, October, 1874.

Therapeutics and Materia Medica. A Systematic Treatise on the Action and Uses of Medicinal Agents, including their Description and History. By Alfred Stillé, M. D., Professor of the Theory and Practice of Medicine, and of Clinical Medicine, in the University of Pennsylvania, etc., etc. Fourth edition, revised and enlarged. In Two Volumes. Philadelphia: Henry C. Lea, 1874.

Pharmacographia. A History of the Principal Drugs of Vegetable Origin used within Great Britain and British India. By Frederick A. Flückiger, Professor in the University of Strasburg, and David Hanbury, F. R. S., Fellow of the Linnæan and Chemical Society of London. London: Macmillan & Co., 1874.

The Legal Relations of Emotional Insanity. By E. Lloyd Howard, M. D., Baltimore. From the Transactions of the American Medical Association, 1874.

On Prolapse of the Umbilical Cord, its Causes and Treatment. By Geo. J. Engleman, M. D., Director of the St. Louis School of Midwives. Reprinted from the August number of the *Amercan Journal of Obstetrics and Diseases of Women and Children.*

Tinnitus Aurium, or Noises in the Ears. By Lawrence Turnbull, M. D., Physician to the Department of Diseases of the Eye and Ear, Howard Hospital, Philadelphia. Reprinted from the *Philadelphia Medical Times*, June, 1874.

Medical Charity: Its Abuses, and how to remedy them. By John Chapman, M. D., M. R. C. P., etc. Reprinted from the *Westminster Review.* New Series. Nos. 89 and 90. Pp. 108.

The Duality of Phases in Nature. Rudimentary Development of a New Science. By William Holderness. San José, California, 1874. Pp. 98.

An Introductory Address delivered to the Students of St. Mary's Hospital, London, October 1, 1874. By Edmund Owen, M. D., F. R. C. S., etc.

List of Institutions, Libraries, Colleges, and Other Establishments in the United States, in Correspondence with the Smithsonian Institution.

Annual Announcement of the Medical Colleges of the Pacific. (Late Medical Department of the University of the Pacific.) Session of 1874.

Proceedings of the Academy of Natural Sciences of Philadelphia. Part II. April, May, June, July, August, and September, 1874.

Transactions of the Medical Society of New Jersey, 1874. Pp. 268.

Transactions of the New Hampshire Medical Society (Eighty-fourth Anniversary), held at Concord, June, 1874. Pp. 130.

Transactions of the Indiana State Medical Society, 1874. Twenty-fourth Annual Session. Cloth. Pp. 220.

Transactions of the Medical Association of the State of Alabama. Twenty-seventh Session, 1874. Pp. 428.

Twelfth Annual Announcement of the New York Medical College and Hospital for Women, 1874–'75.

Translations.

On Retention Cysts of the Female Urethra in the New-born, and their Relation to the Development of Caruncles.—Though the excretion of urine in the fœtus has long been established, the observations have been confined to those cases of complete or incomplete retention of urine, in which the accumulation has either given rise to an obstetric impediment, or attention has been drawn to it in connection with other malformations, etc., and in the majority of cases to those in which there was complete retention, arising from cystic degeneration of the kidneys with occlusion of the ureters, distention of the bladder from urethral defects, etc. Besides these, many cases of degeneration and distention of the urinary passages have been observed without any assignable cause; the examination, however, has been confined to the kidneys, ureters, and bladder, the parts below being overlooked. In regard to the sex, the observations have been chiefly made in males, retention in girls having been observed only in connection with coexisting malformations. In the female sex, however, causes for retention may also be found, giving rise to more or less dilatation of single or several urinary organs. Dr. James Englisch, in an interesting article in the *Wien. Medizinische Jahrb.*, iii., 1873, has demonstrated, by dissection and microscopic examination, the cause of various pathological conditions of the female urethra. While in a large number of cases the urethral mucous membrane is perfectly flat, in others numerous minute openings may be found on the posterior and lateral walls, which lead to the glands of Littré, and frequently elevations are found in the urethral orifice, which, on examination, prove to be these glands in a distended condition. Though the glands of Littré are very near the urethral orifice, the glands of the latter and those of the vulva do not enter into this consideration, for, as proved by microscopic examination, they differ from the glands of the urethral mucous membrane. When normal, the openings of the glands appear as minute points situated close behind the external urethral orifice on the posterior and lateral walls, their direction being, as demonstrated by the introduction of a fine bristle, toward the bladder. They usually extend but half the length of the urethra, and on the posterior wall are occasionally disposed in rows on each side of the sagittal fold; on the anterior wall they are not discoverable with the naked eye. Abnormal conditions of these glands are manifested in various ways. Provided the discharge of the glandular secretion is not checked, the glands remain normal; when, however, there is an obstruction, the secretion accumulates in the canals, dilates them, and gives rise to the retention cysts. In the new-born, the author has observed this only on the anterior portion of the urethra. Their number varies very much, being less abundant when large, and *vice versa;* the largest are always situated nearest the external urethral orifice, while the others gradually shrink and finally disappear. It is remarkable that none of them were found near the vesical orifice, as at this point they are frequently found at a later period in life. When several large cysts are present, they are situated on the posterior and lateral walls, but, when there is a single large one, it is situated upon the lateral wall only. They form distinct prominences over the mucous surface, and there are deep furrows between the dilated glands. When, however, only one gland is dilated, it usually attains a large dimension, impinges on the opposite urethral wall, and presses it outward. On the surface of the dilated gland a dark point is sometimes observed, which corresponds to the orifice of its duct. Although, in the majority of cases, the mucous membrane is tightly stretched over the gland, the author has repeatedly observed folds, which, with the gland, gave rise to a *cul-de-sac*, the opening being directed toward the bladder; this favors accumulations of urine. The dilated glands do not always project into the urethra or vagina, but are sometimes found in the connective tissue, and can only be discovered on section. Observations have proved that the first cause of dilatations is a closure of the ducts. In one case, black spots like comedones were found on their anterior surface; but how this closure is effected could not be ascertained with certainty. A comparison with the observations made in the same condition of the sinus pocularis, and in some folds of the vagina, makes it probable that an adhesion of the superficial epithelial layers first takes place, which soon gives rise to a union of the walls of the duct, which is strong enough to resist the pressure from within. In cross-sections of the vagina numerous isolated epithelial masses will be found between the folds, which have taken origin in the adhesions of the free edges of the epithelia. The last months of fœtal life manifest a peculiar disposition to the adhesion of the superficial epithelial layers, which, in males, shows itself in closure of the sinus pocularis, in females, in retention cysts of the urethra. The author has a preparation of one in a fœtus seven months old; their duration, however, is short, as they are rarely found at a later period. Numerous papillæ occur in the dilated glands, and in their vicinity in the folds in the mucous membrane which are between the several openings. Now, when a cyst bursts, discharges its contents, and leaves behind it a *cul-de-sac*, the papillæ also become superficial, and the whole mucous membrane appears as if covered with them. While in the normal mucous membrane none, or only very small vascular sections can be obtained from immediately behind the exterior urethral orifice, the vascularity, arterial as well as venous, becomes more abundant in those cases where the glands are dilated. The symptoms which attend the above conditions are, first, retention of urine, more or less, according to the number or size of the dilated glands; afterward, secondary conditions, as cysto-pyelitis, nephritis, peritonitis, etc. The gravity of the symptoms will depend on the growth and duration of the cyst. The rare occurrence of these cysts in older individuals seems to speak for the discharge of its contents at an early period. The phenomena observed have relation, first, to changes of the external urethral orifice, and, second, to disorders in the urinary organs. The cyst may often be discovered projecting from the urethral orifice as crescentic masses, on separation of the labia minora, or by exerting pressure from the vagina, and may often be mistaken for prolapse of the mucous membrane. Among the symptoms we also have urethritis, arising first from irritation, and later upon the evacuation of the cyst from the accumulation of urine in the pouches. Besides the pathological conditions mentioned, which arise from these cysts, the author believes from observations and statistics that the increased vascularity lays the foundation for the formation of caruncles of the urethra, all authors, except Norman, agreeing that the seat of the latter is always the posterior or lateral wall. This occurrence will, of course, depend upon the primary condition of the papillæ and the duration of the irritation, as increased growth of the caruncles follows upon increased growth of the papillæ. All irritation will, therefore, accelerate their growth, as the irritation from urine, recurrence of menstrual hyperæmia in young girls, uterine diseases, etc. E. F.

On the Employment of Tepid Baths in Diseases of the Chest, especially in Pulmonary Phthisis.—It is an opinion generally held by the public, and even by physicians, that baths are injurious to patients suffering from any pulmonary complaint, and it is considered heroic treatment in hospital, and, above all, in private practice, to prescribe a bath to a patient who coughs, even when its administration is indicated for the relief of other complaints, as, for instance, urethral stricture, etc. Tepid and hot baths are recommended in a large number of diseases; and all authors, who have observed their action on man in health, agree in extolling their excellent effects. Regarding the judiciousness of their employment in diseases of the chest there is also no question, though hitherto but few scientific observations have been made which would favor this view of their efficacy. Dr. Souplet, at La Pitié, in the service of Prof. Lasèque, has instituted a series of experiments, the results of which permit him to conclude that, by discarding the employment of tepid baths in thoracic maladies, we deprive ourselves of an important and incontestable aid in the treatment. The author bases his conclusions on two hundred observations, most of the baths having been administered to consumptives. In administering a bath, its temperature is the most important point, the occasional addition of a small quantity of sulphuret of potassium, alkaline carbonates, etc., being only secondary; thermometric indications do not always correspond to the sensations of heat and cold, and the physiological and pathological condition of the subjects must be taken into account, and also their individual impressibility. A *tepid* bath is one the temperature of which is about three degrees below that of the body; the temperature of the patient determines that of the bath; from time to time more water is added, to allow of no variation. The duration of a bath, varies from twenty to forty-five minutes; the patient is allowed to remain in it until he feels fatigued, or chilled even in warm water. There is no indication to discontinue the bath provided the patient feels comfortable in it, but the desire to remain is rarely prolonged beyond forty-five minutes, even in summer. On account of the increased appetite which is felt after a bath, the hour which precedes the morning or evening repast is the one which agrees best with patients. Usually, one bath is given every two days. A powerful influence is immediately exerted on the sweats, of which the patients complain so much; the baths are, however, increased to one bath every day when the effect is not sufficiently notable from the very beginning of the treatment; rarely do the sweats resist the third or fourth bath. Afterward, two or three baths a week suffice to check them, and to bring about a marked amelioration, especially in cases of less advanced and less extensive tuberculous disease. This treatment is only accessory, the general treatment being continued, though no anti-sudorifics have been given in the above cases. During the first two or three baths, the patients generally feel a slight oppression and acceleration of the respiratory movements, lasting from two to five minutes, which disappears in the third or fourth bath. In patients who have continuous cough, this disappears, and the expectoration becomes more copious; the pulse diminishes in frequency, and the temperature falls. On leaving the bath, the patient feels comfortable, respires more easily, the appetite is increased, the skin has more tone, the pulse is diminished in frequency; the author has seen it reduced twelve, twenty, and twenty-eight pulsations per minute; the temperature is sometimes reduced two degrees. In cases of acute phthisis, this amelioration does not last more than three or four hours; but during that time the patients are materially alleviated. In consumptives the skin is in an habitual state of moisture, which softens it, and makes it pale and inelastic; in a word, it loses its vitality and a portion of its respiratory faculties. The bath tonifies it, restores its capillary circulation, cleanses it, and removes every thing which embarrasses it in the performance of its functions. Pulmonary respiration being very incomplete, the complementary respiration by the skin plays an important *rôle* in hæmatosis, in facilitating the exchange of gases. In many cases associated with diarrhœa this has been amended by the use of baths; the presence of this complication is, therefore, no contra-indication to their employment. Contrary to the opinion of Fröhlich, that the temperature of the bath should be in inverse ratio to that of the subject, the author believes with Ziemssen that a temperate bath continued thirty or forty minutes produces a more prolonged abatement of febrile heat than a cold bath of ten minutes.—*Arch. Gén. de Méd.*, November, 1873; *Rev. Thérapeut.*, January 1, 1874. E. F.

Lime Glycerine for Burns.—This remedy is as follows:

℞. Oxidi, calc.,	grain.	iij.
Glycerin.,	"	cl.
Sp. æther chlor.,	"	iij.

This preparation has been used by Laub for several years with great success.

Charpie is to be dipped in the mixture and placed over the burned surface; it is then covered with a thin sheet of gutta-percha, and then a layer of charpie is added, the whole to be surrounded with a loose bandage. It is very important that the charpie should be closely applied to the entire burned surface. The pain ceases almost instantly, and the sore heals very rapidly.—*Hospitalstidende* and *Nordiskt Med. Arkiv.*, vol. vi., No. 1. G. R. C.

Miscellany.

Appointments, Honors, etc.—Dr. N. Allen, of Lowell, and Wendell Phillips, of Boston, have been appointed State Commissioners of Lunacy. Mrs. Ellen E. Hammond has been elected a member of the Hartford Medical Society. Four regular physicians have been sent to the Georgia Legislature, one in the Senate and three in the House. Dr. Joseph N. Howe has been appointed Visiting-Surgeon to St. Francis Hospital. Dr. Walter R. Gillette has been appointed Visiting-Physician to the same institution.

Dr. Lombe Athill, of Dublin, has been seriously ill with typhoid fever, but is now convalescent. Dr. Lankester, of London, has also been dangerously ill. Dr. Arthur Farre, accoucheur to the Duchess of Edinburgh and other members of the royal family, is about to receive the honor of a baronetcy. Dr. Graily Hewitt and Dr. Tilt have been elected honorary members of the Obstetrical Society of Philadelphia. The order of Commander of the Legion of Honor has been conferred by the French Government on Prof. Depaul, head of the Clinical Department of Accouchements at the School of Medicine of Paris, and one of the members of the town council of that city. Dr. Fritsch, of Berlin, has been appointed Professor Extraordinary in the university. Alphonse de Candolle, of Geneva, has been elected one of the eight foreign associates of the Academy of Sciences in Paris, in place of the late M. Agassiz.

New York Academy of Medicine.—Efforts are now being made to increase the building fund for the purchase of a suitable permanent home for the Academy. It is intended to be a medical centre, where all the medical societies may have a suitable place for their meetings, their libraries, museums, etc. All will admit the necessity for such accommodations, in New York. Other cities, as Boston and Philadelphia, have set us a worthy example. Thirty thousand dollars would be sufficient for this object, and we are happy to say that twenty-six thousand dollars is already secured. We should be glad to see the entire profession in this city unite in forwarding this worthy enterprise.

Journalistic Notes.—It is announced that Dr. S. Lauder Brunton will succeed Dr. Anstie as editor of the London *Practitioner.* Two new medical journals have made their appearance in Italy: one, *La Rivista Calabrese di Medicina, Chirurgia, e Pharmacia*, edited by Dr. Placido, of Reggio; the other, *La Sferza*, a popular journal of hygiene and education, edited by Drs. Temistocle and Ulisse Santopadre. A new monthly medical journal, the *West Virginia Medical Student*, is announced by Dr. James E. Reeves, of Wheeling, to appear at the opening of the new year.

Lepers.—Dr. Hansen, in the Bergen *Post*, places the number of lepers in Norway, in 1870, at twenty-three hundred and fifty. According to the Canada journals, leprosy is said to prevail to a considerable extent in the little village of Tracadie, at the mouth of Miramachi River, Canada. The inhabitants of the village, who are of French descent, have established a hospital for the benefit of the worst cases. The disease is understood to have been brought to Tracadie by a French vessel, which was wrecked off the coast some eighty or ninety years ago, and on board of which were several lepers from Asiatic ports. The number of lepers is said to be now about two hundred.

A New Work on Medical Botany.—It is announced that Prof. Bentley, of King's College, and Mr. Trimen, of the British Museum, are preparing an illustrated work on medicinal plants. It will include full botanical descriptions, and an account of the properties and uses of the principal plants employed in medicine, especial attention being paid to those which are affirmed in the British and United States Pharmacopœias. There will also be included a descriptive list of the plants which supply food and substances required by the sick and convalescent.

Harvard Medical School.—The prospects of this school are highly encouraging. The classes continue to increase, and there is no longer a doubt of the wisdom and success, even from a commercial point of view, of the new method of teaching adopted. We are glad to learn that over one hundred thousand dollars has already been subscribed toward the new building proposed for the accommodation of the school.

Hospital Students.—The whole number of students duly registered, up to November 13th attending the clinics in Bellevue and the Island Hospitals, was 674. Of this number, the College of Physicians and Surgeons sends 121 matriculants and 8 graduates; Bellevue College, 292 matriculants and 108 graduates; and the University College, 104 matriculants and 5 graduates. The classes are unusually full this winter at all the colleges.

Translations from Foreign Journals.—The translations and summaries from German, French, Italian, Danish, and other foreign periodicals which have appeared in the pages of this journal during the past year, have been the work of Drs. George R. Cutter and Edward Frankel, to whom our readers are indebted for much fresh and interesting matter, obtained with no inconsiderable labor, from sources not generally accessible.

Medical Students in the London Schools.—According to the *Medical Times and Gazette*, the number of students attending the schools of medicine in London this winter is seventeen hundred and twelve, the largest number of any year on record. St. Bartholomew's takes the lead, having one hundred and six students.

Bellevue Hospital Clinics.—Students and others interested in the clinics held at Bellevue Hospital are referred, for particulars, to the advertisement in another column.

Public Health Association.—The third annual meeting of this society, held last month in Philadelphia, was one of unusual interest, and we regret that for want of space we are unable to give even a summary of the proceedings in our present issue. The session lasted four days. Many valuable and instructive papers were presented. Dr. Stephen Smith presided.

Bellevue Appointments.—The following gentlemen were appointed members of the Medical Board of Bellevue Hospital at a meeting of the Commissioners held October 26th: Charles A. Budd, M. D.; W. M. Polk, M. D.; William T. Lusk, M. D.; A. Jacobi, M. D.

Army Intelligence.

Official List of Changes of Stations and Duties of Officers of the Medical Department, United States Army, from October 14 *to November* 13, 1874.

Bartholf, J. H., Assistant Surgeon.—Assigned to duty as Post-Surgeon at Camp Harney, Oreg. S. O. 149, Department of the Columbia, October, 22, 1874.

Carvallo, C., Assistant Surgeon.—Assigned to duty at Fort Stanton, N. M. S. O. 166, Department of the Missouri, October 14, 1874.

Cronkhite, H. M., Assistant Surgeon.—Relieved from duty in Department of the South, to report in person to the President of the Army Medical Board, New York City, for examination for promotion, and, upon its completion, to the commanding general, Department of Arizona, for assignment to duty. S. O. 233, C. S., A. G. O.

Cuyler, J. M., Surgeon.—Detailed as member of Army Retiring Board, to assemble in New York City, on the 16th inst. S. O. 240, A. G. O., November 5, 1874.

De Hanne, J. V., Assistant Surgeon.—Having completed his examination for promotion, before the Army Medical Board, New York City, assigned to duty as Post-Surgeon at Fort Mackinac, Mich. S. O. 229, A. G. O., October 22, 1874, and S. O. 220, Military Division of the Atlantic, November 6, 1874.

Elbrey, F. W., Assistant Surgeon.—Granted leave of absence for six months, with permission to go beyond sea. S. O. 234, A. G. O., October 28, 1874.

Hasson, A. B., Surgeon.—Granted leave of absence for twenty days. S. O. 224, Military Division of the Atlantic, November 12, 1874.

HEAD, J. F., Surgeon.—So much of S. O. 229, C. S., A. G. O., as relieves Surgeon Head from duty in Department of Dakota, is revoked. S. O. 237, A. G. O., October 31, 1874.

MATTHEWS, W., Assistant Surgeon.—Assigned to temporary duty at Fort Hamilton, N. Y. Harbor. S. O. 213, Military Division of the Atlantic, October 28, 1874.

MOORE, J., Surgeon.—Detailed as member of Army Retiring Board, New York City. S. O. 240, C. S., A. G. O.

NOTSON, W. M., Assistant Surgeon.—Assigned to duty as Post-Surgeon at Fort Cameron, U. T. S. O. 162, Department of the Platte, October 30, 1874.

SUMMERS, J. E., Surgeon.—Assigned to duty as Medical Director of this Department. G. O. 19, Department of the Platte, October 24, 1874.

WHITE, R. H., Assistant Surgeon.—To report to Lieutenant-Colonel Brooke, Third Infantry, commanding troops in New Orleans, La., for assignment to duty. S. O. 162, Department of the Gulf, October 13, 1874.

WOODRUFF, E., Assistant Surgeon.—Having completed his examination for promotion before the Army Medical Board, New York City, assigned to duty as Post-Surgeon at Fort Niagara, N. Y. S. O. 224, A. G. O., October 16, 1874, and S. O. 220, Military Division of the Atlantic, November 6, 1874.

The following-named officers will report in person to the President of the Army Medical Board, now in session in New York City, for examination for promotion, and, on its completion, rejoin their respective stations: Assistant Surgeons—J. H. Janeway, J. R. Gibson, J. M. Brown, H. E. Brown, and Elliott Coues. S. O. 233, A. G. O., October 27, 1874.

DICKSON, J. M., Assistant Surgeon.—To report in person to the President of the Army Medical Board, New York City, for examination for promotion, and, upon its completion, to the commanding general, Department of the South, for assignment to duty. S. O. 233, C. S., A. G. O.

KNICKERBOCKER, B., Assistant Surgeon.—To report in person to the President of the Army Medical Board, San Francisco, Cal., for examination for promotion, and, upon its completion, rejoin his proper station. S. O. 233, C. S., A. G. O., assigned to duty as Post-Surgeon at Fort Colville, W. T. S. O. 149, C. S., Department of the Columbia.

ROSE, GEORGE S., Assistant Surgeon.—Relieved from duty in Department of Arizona, to report in person to the President of the Army Medical Board, New York City, for examination for promotion, and, upon its completion, by letter to the Surgeon-General. S. O. 233, C. S., A. G. O.

WILSON, A. D., Assistant Surgeon.—To report in person to the President of the Army Medical Board, New York City, for examination for promotion, and, upon its completion, to the commanding general, Department of Arizona, for assignment to duty. S. O. 243, A. G. O., November 9, 1874.

Obituary.

DR. NATHANIEL BRADSTREET SHURTLEFF, of Boston, died of apoplexy October 17th, in the sixty-fifth year of his age. He graduated at Harvard in 1831, and took his medical degree in 1834. He was gifted with a great taste for scientific, and still more for literary, pursuits. Besides being a member of various medical societies, he held a prominent position in many others, including the Boston Society of Natural History, the American Academy of Arts and Sciences, and the Massachusetts Historical Society. He was an honorary member of the Royal Society of Antiquaries, of London, and for twenty-two years had been Secretary of the Board of Overseers of Harvard College. He was Mayor of Boston in 1868, 1869, and 1870, and was the author of several works, chiefly historical.

JOSEPH SWAN, M. D., of London, an eminent anatomist, and author of numerous works on the nervous system, died October 4th, aged eighty-three years.

THE Italian journals record the premature death of Dr. ANTONIO CORRENTI, who, though only thirty-two years of age, had already gained considerable reputation as an ophthalmological surgeon, and was attached to the chair of Anatomy in the Royal Institute of Florence.

THE profession will learn with regret of the death of Mr. WILLIAM A. BLANCHARD, of Philadelphia, formerly of the firm of Lea & Blanchard.

DR. C. T. KJEVULF, chief of the Medical Department of the Interior, Norway, died September 7th, aged forty-nine years.

CONTRIBUTORS TO VOLUME XX.

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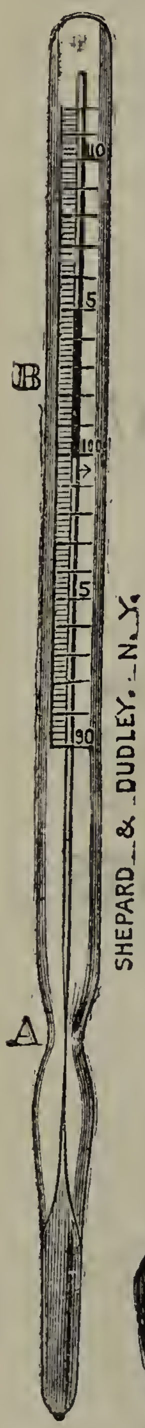

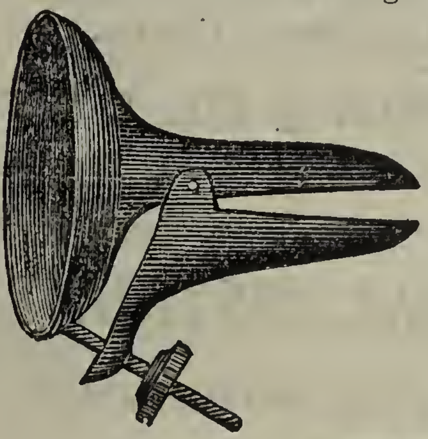

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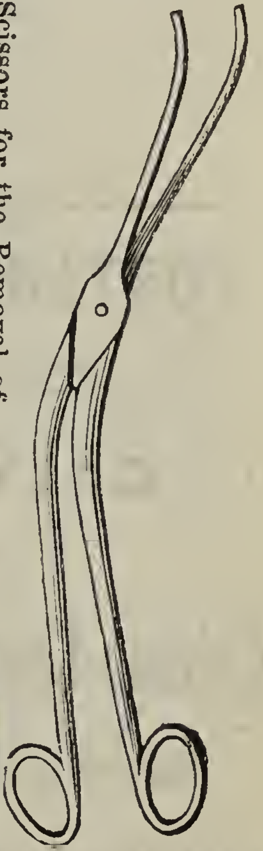

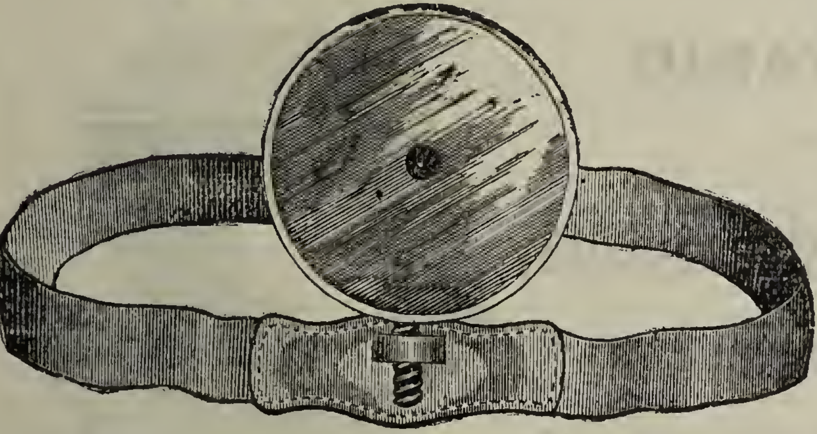

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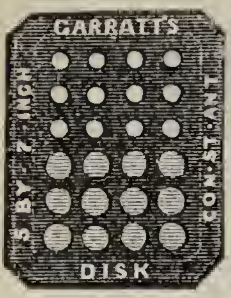

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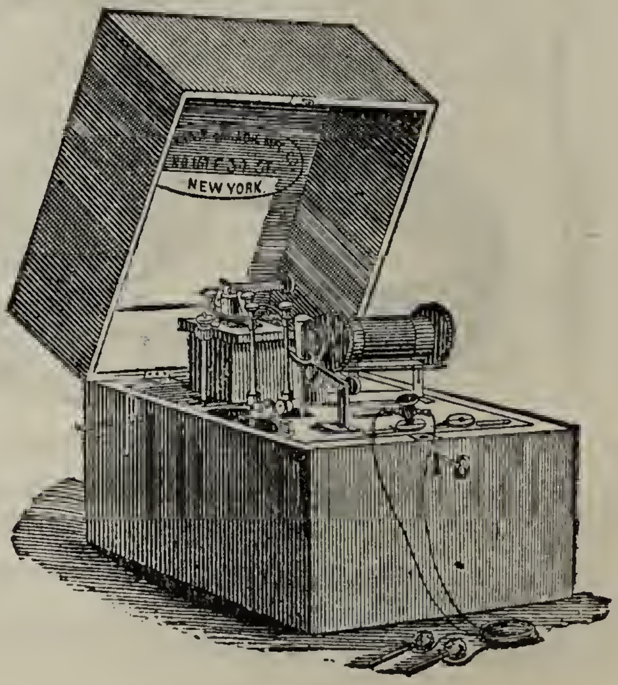

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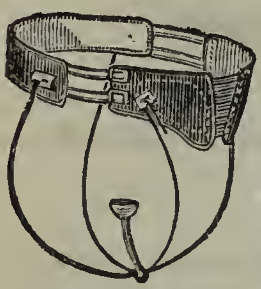

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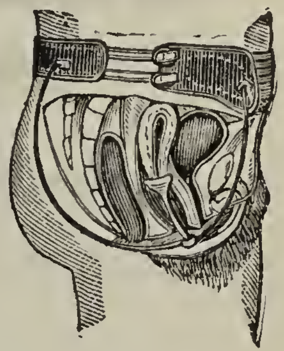

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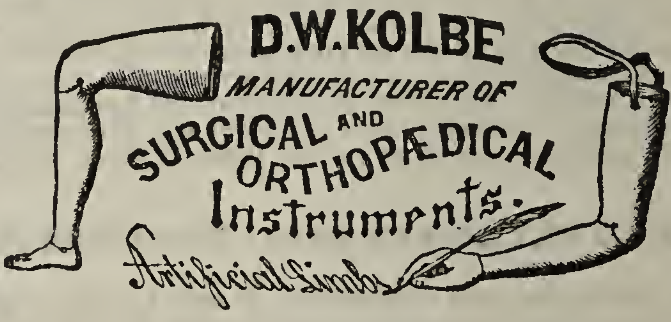

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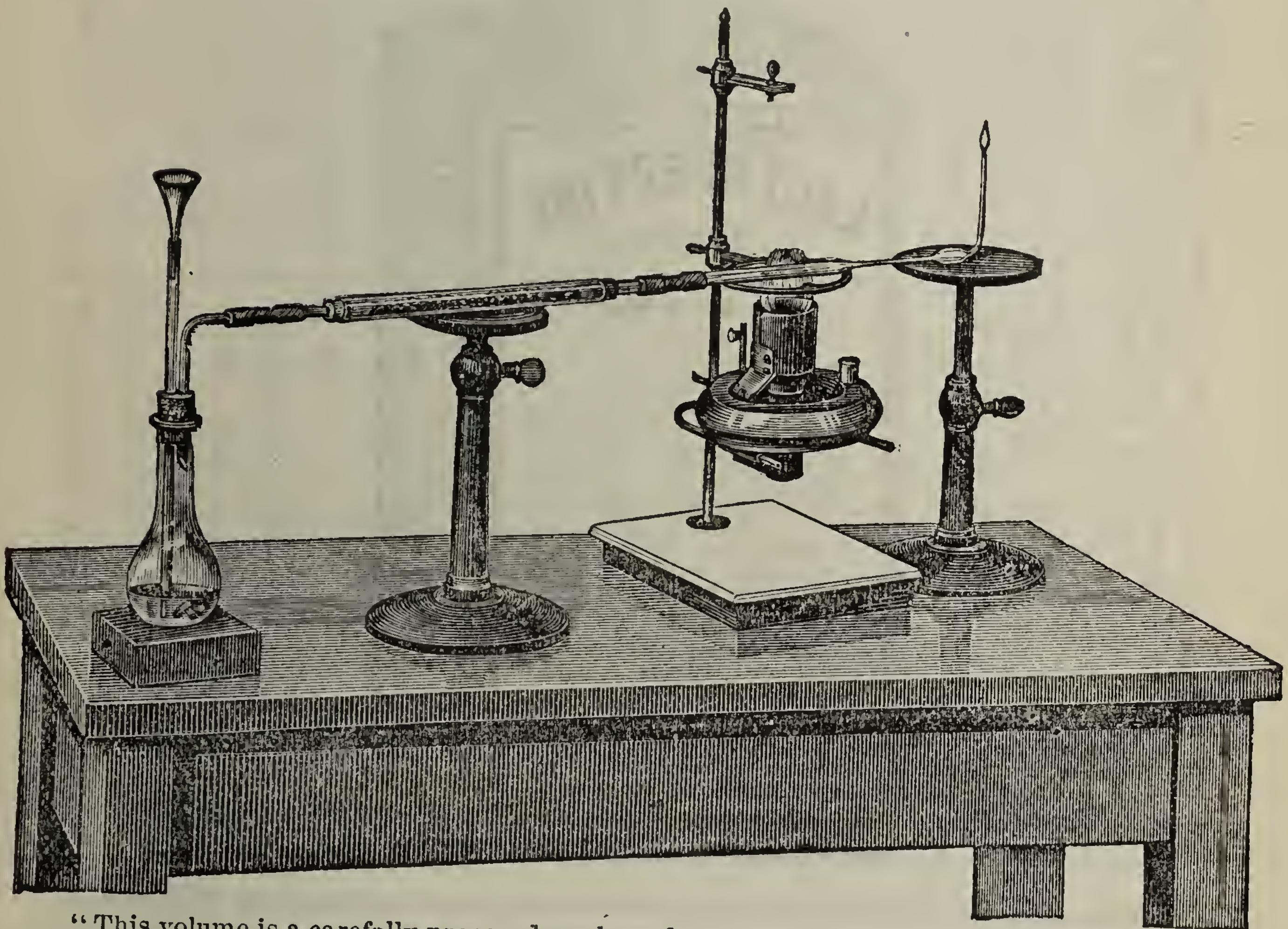

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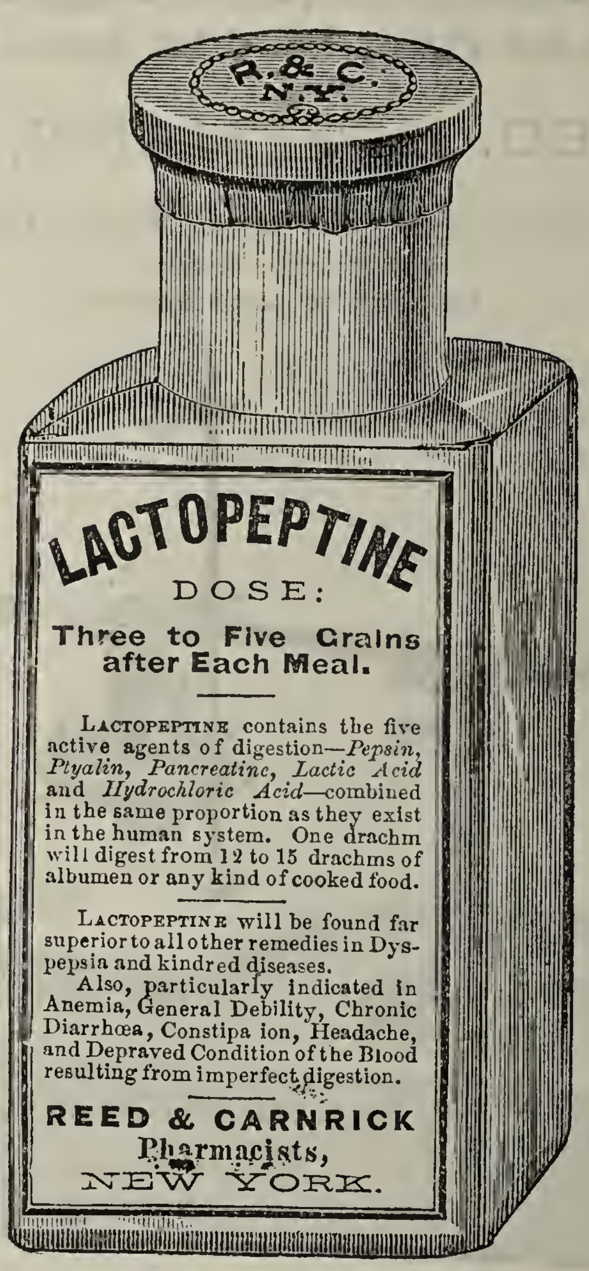
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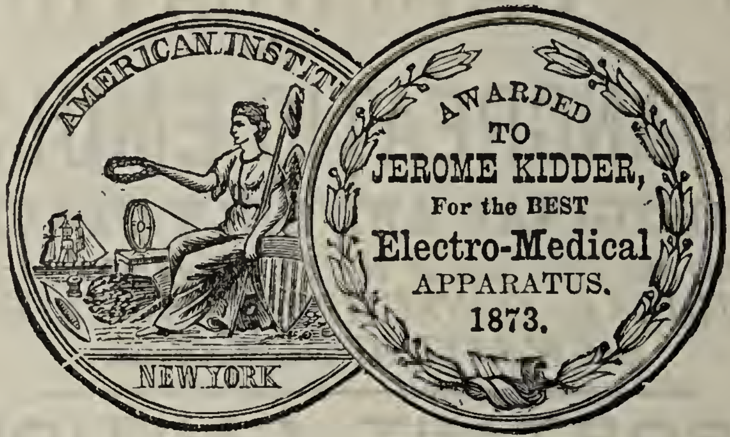

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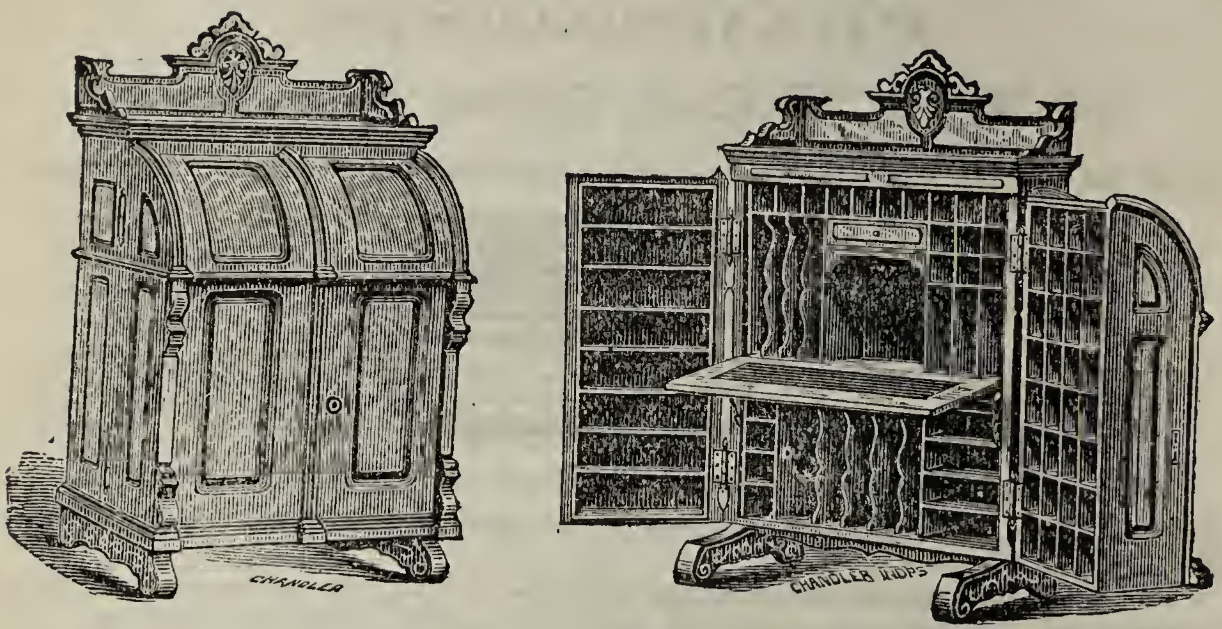

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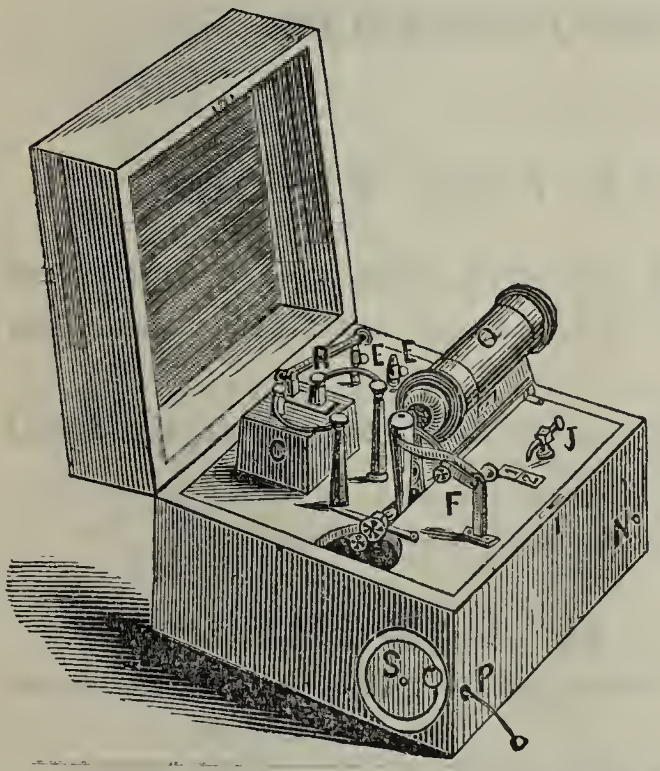

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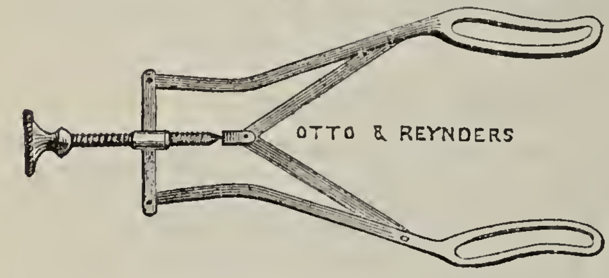

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☞ All communications relating to VIRGINIA MEDICAL MONTHLY should be addressed to the Editor.

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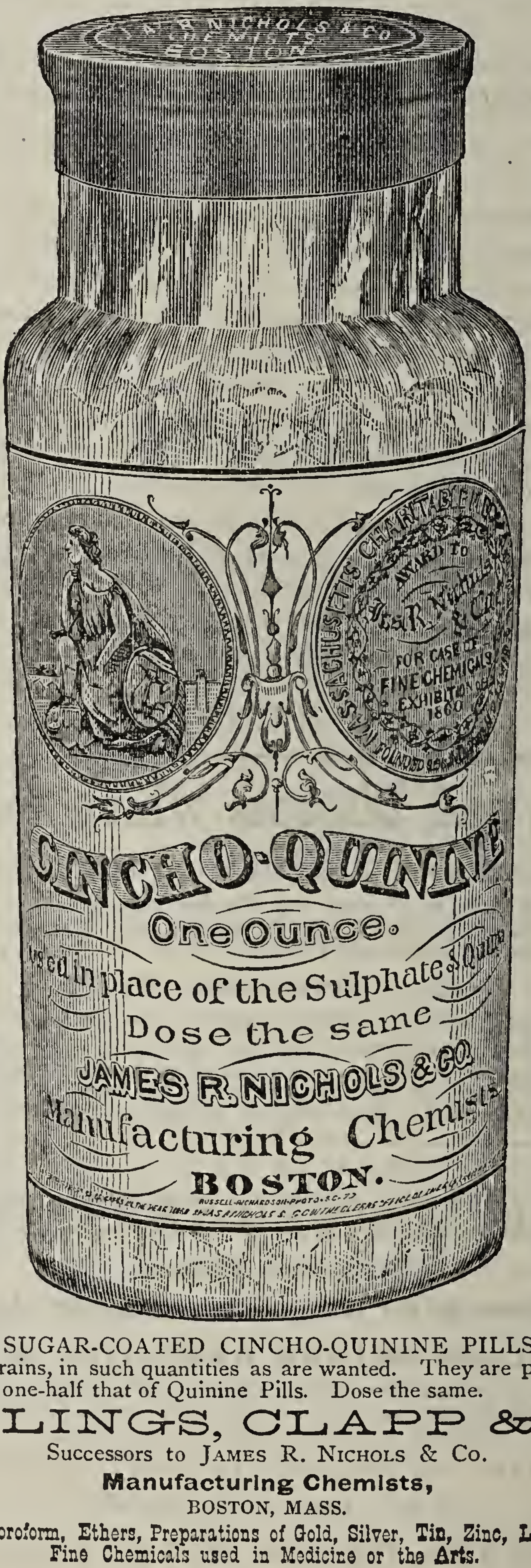
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